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INQUIRY

INTO THE
NATURE, AND CAUSES
OF THE
GREAT MORTALITY AMONG THE TROOPS AT
ST. DOMINGO:

WITH
PRACTICAL REMARKS
ON THE
FEVER OF THAT ISLAND;

AND
DIRECTIONS,
FOR THE CONDUCT OF EUROPEANS ON THEIR
FIRST ARRIVAL IN WARM CLIMATES.

BY

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Causa latet, vis est notissima.

L O N D O N :

Printed for T. CADELL, Jun. and W. DAVIES,
(Successors to Mr. CADELL) in the Strand,

M.DCC.XCVII.



T O
HIS ROYAL HIGHNESS
FREDERICK AUGUSTUS
DUKE OF YORK,
FIELD MARSHAL,
AND COMMANDER IN CHIEF OF ALL HIS MAJESTY'S FORCES,
&c. &c. &c. &c.

THIS ATTEMPT,
TO CONTRIBUTE, TOWARDS THE PRESERVATION OF THE
HEALTH OF THE BRITISH ARMY,

(Of which, in critical Times, HE has been chosen the Guardian;
and in the Conduct of which, HE has displayed,
not only, the Hereditary Valour of the HOUSE OF BRUNSWICK,
but such consummate Prudence, and exact Propriety;
as at once, to merit the Applause of the PUBLIC, by His Vigilance,
and to command the Affection of the SOLDIER,
by His Attention and Kindness)

I S,
BY HIS ROYAL HIGHNESS'S PERMISSION
HUMBLY INSCRIBED,
AS A MARK OF THE MOST PROFOUND RESPECT,
AND SINCERE GRATITUDE—

BY
HIS ROYAL HIGHNESS'S

MOST OBLIGED AND
DEVOTED SERVANT,

THE AUTHOR.

P R E F A C E.

AFTER the publications, which have already appeared on the Yellow Fever; it may require some apology, for offering the present Work to the Public.

The Fever described by Dr. RUSH, which raged with so much violence at Philadelphia, differs very widely from the disease, which caused the astonishing mortality of St. Domingo. Nor does the pestilence of Boullam, as described by Dr. CHISHOLM, bear any striking resemblance to the Endemic Remittent, which made such havock among our troops.

They describe a fever highly pestilential, and contagious; whereas the fever of St. Domingo, never manifested any such disposition.

Having had the best opportunities, during a residence of nearly three years at Port-au-Prince; of observing the progress, and treatment of the St. Domingo Remittent; I thought it my duty to communicate the result of my experience, and the observations I made on the genius and type of the fever. It may again, be the fate of a British army, to visit this inhospitable island, and to suffer from its diseases; it is therefore of importance to collect every information, which may enable us, to avoid them, or to combat them with more success,

success, when they occur. Every practitioner ought to come forward, with his stock of facts, and observations; for the benefit of the Public.

The mortality at St. Domingo, has filled the minds of every one with terror and astonishment; and though men of distinguished abilities in their profession, assiduously attended the sick; their success was by no means, proportioned to their exertions or talents. When many minds, however, are occupied in one research, the subject is viewed in various lights; and, discoveries of importance may at length be made. Impressed with these sentiments, I have thrown together, the remarks and observations,

which arose from an extensive experience ; during a painful attendance, on the General Hospital at Port-au-Prince. To these I have added, whatever appeared to me connected with the welfare of an army, destined to act in a warm climate.

The constant occupation, my profession furnished me, did not permit me, to take down so many histories of the disease, as I wished ; I was obliged to make my notes short ; to retain only, leading and important circumstances. The points I have chiefly laboured to establish, are of considerable importance. I have endeavoured to prove, that what has been termed the Yellow Fever of St. Domingo,

is not an infectious disease ; that it is not a new or peculiar distemper ; but the common Remittent Endemic of that country, applied to the English constitution, and accompanied occasionally with yellowness, as an accidental symptom. The dread of its being infectious, has injured the recruiting service, by terrifying young men from enlisting in any West India regiment ; and many have been kept in a state of continual alarm and terror, when the service required them to have the least communication with the sick. It is pleasing to reflect, that the general testimony of all the physicians at St. Domingo, declares that the Remittent of that island is not contagious. One source of fear, is thus removed ; a source, which has
unne-

unnecessarily, alarmed and terrified all those, who embarked for this climate.

I have endeavoured to show the causes, which render the Western climate peculiarly dangerous to our youth; and I have recommended a scheme of recruiting men, for this service, at a more advanced period of life. The chance of living, in a warm climate increases, as we advance from thirty-five to fifty years of age. Men at these periods, may enjoy health at St. Domingo, and perform active duties.

I have founded my plan of Prevention, on the theory I adopted respecting the causes, which rendered the Remittent so destructive.

The

The rules for diet and exercise are the result of experience, and observation, and I trust will be found of real utility ; as they apply to all warm climates.

The method of Cure, which I pursued, after many fluctuations of opinion and practice, may be thought too bold, by those who have not seen the rapid progress of the disease. It however happily succeeded, in many instances ; and I have candidly stated the grounds on which it was founded, and its various success. In a disease, which baffles ordinary means, the physician must seek, extraordinary resources, and endeavour to subdue by vigour, what would not yield to common expedients.

It

It is probable, that in the course of the work, I have made observations, which have been formerly made by others on similar subjects.— It is not easy to avoid this, in medical reasoning; if it occurs, it arises from my ignorance of the authors, for I had not the power of perusing any books during my residence in St. Domingo. It was a duty, I owed to the Army with which I served; to publish for their benefit, whatever might enable them to avoid danger, or secure their health. To that Army, I owe many obligations, which I shall always acknowledge, and remember, with gratitude. If this work contributes to save one life, or to introduce a better mode of treating this formidable disease; I shall feel myself

myself more than rewarded, for my labour.

It is a pity, that Officers in command, do not read such parts of medical works, as treat of the health of soldiers. This kind of knowledge, in warm and unhealthy climates, would prove highly useful. The General of an army, ought to be well informed, in whatever regards, the Encampment, Diet, or Exercise of his soldiers. It is not in the power of medical men, to pursue extensive plans, without the support of the Commanding Officer; they can only recommend, but cannot execute. Their schemes of health, are more readily complied with, when the officer understands fully, the principles on which they
are

are recommended. The works of JACKSON, PRINGLE, and MONRO, contain valuable information on this subject.

Whilst I venture thus before the Public, I must claim their indulgence; I am fully aware of the imperfection of my essay. It was written in the bustle of a few weeks leave of absence, from the duties of my station; to which I am again speedily to return. The language must often offend the ear; and the arrangement is not so correct as might be wished. I have endeavoured to state, in the clearest manner I could, whatever I thought interesting or useful. I have blended the matter of fact, and my reasoning, too much together; but my
time

time would not permit me to alter this arrangement, which would oblige me to new-model the work. These, and other suggestions, were made by a friend, celebrated for his talents and learning; who condescended to peruse the work, and whose remarks, would insure it a better reception, if I could avail myself of his plan. I trust this will form some apology, for the general incorrectness of the performance.

I shall conclude, by observing, that many practitioners have lost their patients, by searching for definite indications, in the fever of St. Domingo. Time has been lost, in combating the lesser effects, or symptoms of the disease. My object has been, to alter, if possible, by

sudden and powerful means, all the circumstances of the habit, and by this change, to give rise to a new train of movements. It ought to be ever remembered, that when we overcome any morbid action, in the human body, or suspend its power; that the system is immediately disposed, to return to its usual laws. So that to suspend the action, of a morbid power, in the body, is to afford the system a cessation from hostilities; if I may so speak, and to enable it to recover its ancient constitution.

Upon the whole, I have endeavoured to make this Enquiry as useful as possible to the Army, for whom alone it was written.

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INTRODUCTION.

THE present Enquiry proposes to investigate the nature and causes of the astonishing mortality among the troops in St. Domingo ; a mortality almost unequalled in the annals of war, and which has nearly annihilated our army in that quarter, or rendered them incapable of energy and exertion. In this view, it is an enquiry of the utmost importance, as the preservation of so many valuable subjects is involved in it. The opportunities I have had of observation have been numerous and extensive : a residence of nearly three years at Port-au-Prince, which might be considered rather as a general hospital than a garrison, enabled me to mark the progress of that formidable disease, which in this country has obtained, without distinction, the name of Yellow Fever. At a very early period, I could not help remarking the unequal warfare carried on, in that quarter, between an European army and a people inured to the climate. The European soldier, languid and relaxed, from the

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excessive

excessive heat, had to contend with an enemy, inferior indeed in the art of war, but formidable from a frame of body which was adapted to the climate, and derived vigour and activity from that influence of the sun, by which foreign troops were enervated and exhausted. In a warm climate, the European soldier requires many comforts; but the naked Brigand climbs the tree for his daily food, and sleeps in perfect security under the broad canopy of the sky. A contest with such a people must be ever tedious, unequal, and uncertain. We cannot pursue them to their fastnesses. The neighbouring mountain affords them the same protection and means of existence with the one from which they have been just driven, and an extensive fertile country affords them perpetual change. Such a people can only be brought into subjection by a treaty, or overcome by an army of negroes, possessed of the same habits as themselves, but more expert in arms, and led on by such a proportion of European troops as might animate and encourage them. The armies of India are organized on this principle; and I am convinced the armies of the West would become more victorious by similar management.

I believe

I believe Sir ADAM WILLIAMSON had in contemplation the commencement, and actually begun this scheme of war, which his return to England prevented him from completing. Under an officer so deservedly popular, and to whom the natives were so strongly attached, such a plan would have produced the most beneficial effects ; the lives of thousands, who have fallen, not by the sword of the enemy, but by the climate, would have been spared ; and the conquest of the island would become more certain and more rapid. The temporary expence of the establishment would no doubt be increased ; but have they diminished under an opposite plan ? Do we not incur an enormous expence in the hire of transports, and the attendance of ships of war to convoy them ? and do we not suffer still a greater loss in the destruction of so many of our valuable troops ?

So much I have thought it my duty to say on the general plan of our operations. Some Europeans we must have there, but their number ought to be diminished, and they should be formed from the veteran remains of the regiments who have already served there, and overcome the terrors of the climate. To such men an additional pay might be granted ; no reward

can equal the hazard of the service. I am doubtful whether it would be sound policy to accept the submission of the Brigands, were they all inclined to submit at the present moment; they are too numerous to be trusted; and should they once more bend under the lash of the planter, their habits of indolence and depredation would soon return, and they would again sigh for licentious idleness. Among new negroes they would be so many apostles of sedition, and they would scatter amongst them the creed of the national convention; a creed which would make revolt and murder duty, and which would dignify every act of horror with the sacred name of an enthusiasm for freedom. The only scheme of subduing them appears to me to be, the enlisting great numbers of them into our army, and forming them into regiments commanded by British officers, or French loyalists of approved fidelity. Military discipline, without extreme rigour, would beget habits of subordination and attachment to their officers; and marks of distinction, judiciously bestowed amongst them, would generate military pride, and an ardour very necessary to connect and support such bodies. The rest, whom we could not employ in this manner, must be protected in some district, as free men,
under

under the auspices of our government and the guardianship of our laws, or they must be sent to some other country, or divided and watched among the several estates now to be re-peopled: to exterminate them entirely is perhaps impossible, and were it possible, would not, I trust, be recommended by Great Britain, who would not renew the scenes which stain the Spanish annals; scenes which deluged the peaceful plains of Hispaniola with the blood of that meek and patient race, who were its natural possessors.

These observations, though not strictly medical, are by no means foreign to my purpose. My object is to diminish the mortality of British soldiers in St. Domingo; and such a plan would more effectually answer the purpose, than all the medical exertions of the most experienced and skilful physicians. The errors committed in the choice of situations for the army, on our first taking possession at St. Domingo, have been severely felt ever since. Misled by erroneous and interested advice, they were conducted to Port-au-Prince, the most unhealthy spot in the island, where they languished and dwindled away without any service to the cause they were meant to

support. Even the advantages gained by the enterprize of the gallant MARKHAM were hardly any compensation for his own individual loss, and the many others who perished in supporting his exertions. A few frigates cruising in the Bite of Lugan would have gained more advantages than any force we could station at Port-au-Prince, which has proved the grave of our Army, and which must have ultimately fallen into our possession.

I shall now proceed to the immediate business of this work ; to enquire into the causes of the mortality that has distressed our forces.

CHAPTER I.

SECT. I.

Character of ST. DOMINGO—Situation of its Towns—Causes of Ill Health—State of the British in Port-au-Prince—Difference between the French and English Constitutions—French Medical Practice examined.

ST. DOMINGO, from the earliest accounts of its settlement to the present period, has been an island remarkably unhealthy. The Spanish records bear the most unequivocal testimony of the rapid and destructive progress of its diseases, which unpeopled their rising villages, and disappointed their precipitate rapacity in the pursuit of many of its favourite objects. Since the French have had a share of this valuable island, they have also experienced the fatal effects of its climate. It was their policy to conceal the ravages of disease, and to induce as many as possible to colonize and

settle in this most luxuriant and fertile country. They succeeded; and many daring adventurers took up their abode in this fruitful region, from which they seldom entertained any wish to return to the mother country. Even noble families obtained grants of lands, and sent their spurious descendants to occupy them, who, in this new habitation, enjoyed every luxury, and the mimic splendor of the noblesse themselves. These adventurers never wished to return; and they accordingly cultivated and adorned their plantations, as the residence of their youth and age. This, joined to the fertility of the country, is one reason why the island of St. Domingo was more highly cultivated than any of ours. The planters and colonists of our English islands seldom pass their lives abroad, and look with fond expectation to the day they are again to revisit their native soil; hence their plantations are not so highly finished in the culture, nor their establishments so splendid or permanent as those of the French. The English planter consults present advantage; the French, looks further forward.

The towns of St. Domingo, especially Port - au - Prince, are admirably calculated
for

for the purposes of commerce. Considerations of health gave way to the schemes of avarice and the convenience of attaining riches. It must be confessed, that the French made the utmost of every situation they occupied, and improved them as far as they were capable of improvement; their streets were wide, extensive, and open; a chain of virandas, or piazzas, sheltered from the sun, connected all the houses, under which the passenger could walk free from every inconvenience: a row of trees on either side of the street refreshed the eye, and gave a rural appearance to the whole, whilst streams of water, flowing along, carried off any impurities, which, in spite of every care, might accumulate. The French have taken great care to supply all their towns amply with water; a great consideration in hot countries, but which we neglect in our colonies in a remarkable manner. But notwithstanding these endeavours on the part of the French, they occupied situations, which could not be rendered healthy by any means they employed. Port-au-Prince is one of those. It is placed at the bottom of an immense bite, which pushes itself into the heart of St. Domingo. The scite of the lower part of the town is, in fact, on a marsh gained from the

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sea,

sea, the skirts of which are covered with weeds or mangroves, where decomposed animal and vegetable matters are promiscuously thrown; on these the sun exerts its power, and the breeze conveys the noxious particles with a new activity to the lungs and bosoms of the inhabitants. But this is not all: the sea breeze, which in other situations is hailed as the genial source of refreshment and health, is here interrupted; the island of Gonave is so placed in the mouth of the harbour, as, in a great measure, to intercept this salutary gale; and, before it arrives at Port-au-Prince, it loses its usual coolness, by passing over heated lands, and gathering in its course noxious vapours. This necessarily results from the inland situation of the town. Besides these manifest causes of ill health, Port-au-Prince is exposed to the action of others. It is placed on a level, on the verge of the bite, and surrounded by very lofty mountains, from the bottom of which a horizontal plain stretches towards the town. Torrents of water, in times of rain, rush through this plain, and retain their impetuosity till they reach the sea.

The land is moistened, but after the torrent ceases the water stagnates; small streams,
+ attaining

attaining a horizontal level, lose the impetus acquired in their descent ; they linger in the plain, and by mingling with the soil form a marsh. On this marsh a vigorous sun acts daily, and evaporates its noxious particles, which are conveyed to the lungs of every one that breathes, and applied to their skins, and probably in this manner communicate with the blood. This is a never ceasing cause of disease, a nursery constantly rearing mortal poison. In every inspiration, we draw into our bosom a column of air thus impregnated, in every step we walk, a fresh application of these particles is made to our bodies ; it is no wonder then, that on this fatal spot the British troops caught fever in each treacherous breeze. It is true, that the French, when they exclusively possessed this town, did not perish in the same proportion with us. The causes of this difference are not difficult to trace ; the French possessed a free open country, and could at pleasure retire to breathe the more pure atmosphere of their distant plantations. Every merchant, every planter, in short, every inhabitant, possessed the power of retiring into the country and changing their situation.

In

In this manner they obviated the fatal effects which would otherwise result from the uniform and constant application of the exhaled miasmata. They were besides amply supplied with fresh vegetables, and every luxury that contributed to pleasure or health. Very different was the situation of the British ; surrounded on every side by the enemy, they were imprisoned within the walls of a town half demolished, daily exposed to the sources of disease, and without a supply of good vegetable or animal food. Instead of the cheerful elevation of spirits, which the view of prosperity and peace naturally produces, the British were depressed by every thing that could sink the mind to a state of despondency. In want of the comforts that can render war or exile tolerable, and exposed to an unfriendly sun, they became the daily spectators of death. The constant ravages of fever amongst them spread a general gloom, and weakened the vital powers ; a moment of debility is favourable to the invasion and the conquests of disease, and accordingly thousands perished ; besides, the British, from the numbers who daily expired, were so weakened, that a large portion of duty was thrown on those who were well, or even convalescent.

Thus

Thus disease, by debilitating and exposing the few who had escaped direct attacks, necessarily perpetuated and increased itself. The French inhabitants were chiefly composed of people born in St. Domingo, and supported by that gradual adaptation to the climate, which habit confers on the natives of the most unhealthy regions. All the English inhabitants were chiefly strangers from northern climates, and little habituated to any warm region. A state of war too exposes all classes, in a besieged or blockaded town, to numerous disadvantages, but chiefly the soldier, who must brave every vicissitude of climate, the frequent changes of each varying night, without the benefit often of refreshing rest or restorative diet. In peace it is otherwise; there is no cause for the same vigilance and perseverance; the soldier carries on his duty with all the comforts of civil life. Port-au-Prince had all the disadvantages of a blockaded town; the soldiers or inhabitants could not change their situation, or fly to the hills from the ravages of disease. Danger surrounded them in every quarter, and they were obliged tacitly to submit to their fate.

The French possessed other advantages.

Their

Their constitutions seem better calculated for warm climates than ours. The manner of life in old France, or its colonies, was not calculated to form that irritable, sanguine, plethoric habit, in which the effects of inflammation are particularly felt, and in which they proceed with rapidity to a fatal termination. The French, ere they visited these colonies, either for a transient or permanent residence, were in a state of salutary preparation; they took several medicines calculated to diminish the plethoric state; they continued, on their arrival, to pursue a moderate, cautious, and sober plan of life; the quantity of animal food they used was very small; they indulged not in wine, or ardent spirits, whilst the body was kept moderately open, and they were gradually accustomed to bear the sun; the tepid bath too was used to cleanse the skin from impurities, and preserve it open, for the purposes of perspiration, so essential to health. The English, on the contrary, who embarked for war, were in every respect the reverse of the French. Their diet, composed of large portions of animal food, and amply diluted with fermented liquors, rendered them full and irritable. In this state they embarked; in this
state

state they landed; superadding the effects of salt provisions at sea. Instead of the preparative and sober regimen of the French, we are inclined to prolong our convivial enjoyments, and sacrifice considerations of health to gaiety and friendship. Some are impressed with fear, and imagine that debauches of wine banish not only their fears but their danger. This is an opinion fatal to many. They land, and, friend meeting friend, rush to the feast, where, to use the words of ADDISON, “death and disease lie in ambuscade among the dishes.” On the early arrival of the British too, after the long confinement of a passage, they run about the streets, careless whither, and expose themselves at once to the sun’s most powerful influence. Ere habit has imparted its defensive powers, they are ordered to duties which require activity, and which increase the irritability of the constitution, and, in this situation, as it were betrayed into debility, they are seized with fever, which finds them an unresisting prey.

In this manner that astonishing havock, which has terrified and alarmed abroad, and excited just fears at home, was created, and continued. If I mistake not, it will be found,
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on a strict examination, that a tendency to an inflammatory habit forms the basis on which the Remittent of St. Domingo establishes its devastation. The sudden determinations made to the vital organs depend entirely on the energy and irritability of the vascular system. In the French constitution, such derangements do not readily take place, because there is not in the vascular system either the same energy or irritability as in the English.

The re-action, as it is termed, is weak and feeble in the former; in the latter, is strong and powerful; hence fewer of the French perish than of the English, when actually attacked by fever. But this difference in no degree depends on the superiority of their medical practice, which they arrogantly assume. It is with pain I am obliged to mention, that I have not met with one French practitioner, on whose veracity the least reliance could be placed. Impelled by vanity, and that spirit of gasconade in narrative, which of late fills all their writings, they exaggerate every thing they relate, and, with deliberate impudence, attribute to themselves the most extraordinary talents. Such a charge against a set of men, professing at least a liberal pursuit, ought to be

be very firmly and well supported. I appeal, without hesitation, to every medical gentleman who has practised with them in the West Indies, and I do not fear the least contradiction. Equally æconomic of medicines and truth, they committed their patients to a nurse, and left the issue to nature. If there is any thing in the powers of medicine, or in vigorous treatment and prescription, it is wholly wanting in the French practice. Ptisans and frequent injections form the prominent features of their treatment. The German *dieta aquæa*, and large quantities of lemonade, are also prescribed. Camphor, opium, musk, and æther, are very rarely given; except in the hopeless stages of fever, and then not in quantities to produce any great effect. I do not deny that the French physicians merit praise for their attention to a very essential part of medical treatment. Nursing is often of as great importance as medicine, and they have improved it; but they possess no higher merit. Their plan forms a very excellent part of a system of practice, but cannot be surely trusted wholly. Let the French and English modes of treatment be blended and mixed; the vigour of our practice, with the benefit of French nursing, and the patient will have every chance the

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present

present state of medical knowledge can afford him.

On my first arrival at Port-au-Prince, a French physician of some learning and abilities, almost induced me to believe; that he had a mode of treating the Endemic of that country, which generally succeeded. Trusting to his conversation, and confiding in his skill, I took him to visit one of my assistants then under fever; I requested he would prescribe; he took the management into his hands, and the youth perished. This would be a solitary instance of no great weight, as it might happen with the ablest physician, were it not followed by a number of others equally notorious. But the physicians always had some silly subterfuge, such as not being called in time, the obstinacy of the patient, and a variety of other trifling evasions. But I shall not rest the proof of what I have asserted on this alone. Dr. JACKSON, whose abilities and learning are universally known, and whose liberality and candour have been experienced by all those who have ever met him in his professional character; consigned to the care of a French physician, a certain number of the German and Dutch troops. From his pompous and confident assertions, much was expected; it

was a fair experiment, and a liberal comparison between French and English treatment. What was the result? On a comparison of the returns from that hospital, the number of deaths considerably exceeded our loss with similar numbers. This was an unequivocal trial, and amply refuted all their exaggeration. The truth was fairly stated, and made them silent.

I would not be thus particular in examining the proceedings of the French physicians, had not they, in the most illiberal and shameful manner, propagated unfounded reports relative to English practice. They boldly asserted, that the English physicians and surgeons, killed their patients, and were ignorant of their profession. Such a report, industriously circulated, had bad effects; it diminished the confidence of the troops in the medical staff; and confidence is of the utmost consequence, as it supports the mind, and elevates it with hope. They were not contented with scattering these rumours at St. Domingo, but they also wrote home, and addressed an anonymous letter to the medical board, and even put paragraphs in our papers, all tending to lessen the confidence of the British in the medical officers who attended them. I trust I shall be excused for entering

into this detail, and stating the question fairly. Every one will allow that there is something to be learned in the diseases of every country by being on the spot, which neither description or reading can supply ; nor can it be supposed, where human lives are at stake, that any one would for a moment hesitate to adopt the plan of others, where it promised any hope of success. The man who from pride, prejudice, or illiberal rivalry ; would reject improvement, or despise knowledge, ought to be expelled society as a monster, who would sacrifice the human race to his unfeeling vanity ; but in no place was improvement more likely to be adopted, than St. Domingo, where, unfortunately, all our plans of treatment had but little success.

The medical staff of that island was composed of men of liberal education, and to whose attention the army will bear testimony ; it was not likely that such men would sacrifice, to an illiberal prejudice, the lives of their countrymen, endeared to them by acquaintance, and by common hardships.

It might be supposed, and in fact it was given out, that St. Domingo, before our arrival there, was by no means unhealthy ; and

that their garrisons suffered very little. In this declaration the French physicians exulted; but they attributed the difference entirely to their own skill and superior management. We have already seen how much credit is due to their assertions; and in this, as well as in most instances, they will be found false. Every body knows, that St. Domingo was always unhealthy. The most salubrious and best climates have their periods of disease; there is no country yet known that can boast an exemption from these laws of nature. It has been already stated, that the French suffered less than we have done; but the same fever, which has swept off our troops, raged also in the French garrisons, and made great havock. There cannot be a stronger proof given of the mortality of the French troops, during the old government, than their being obliged, every three or four years, to renew the garrisons with 10,000 men. What became of these troops? few of them ever returned to France. They became victims to the fever of the island. When the revolution begun its horrors, it was not in the power of that convulsed nation to send the usual supply to St. Domingo; consequently the former garrisons were greatly diminished;

and, in fact, we found very few of the veteran troops of Old France to oppose our views or progress. I have been thus full and explicit, on the former state of this island, to disprove the false assertions of the French physicians, and refute insinuations equally unfounded and illiberal; but which, by creating despondence and fears, and lessening confidence, might produce the worst effects.

Hispaniola has always been, and I fear in a certain degree will always continue, unhealthy; but our further progress into the country, by enabling us to change our situation, by varying the scene, by amusing and delighting the senses, and being enabled to procure a more wholesome diet, may yet dispel our fears, and inspire more confidence. Such a change would gratify the feelings of humanity, and be particularly pleasing to those who have witnessed the distressing scenes of our early operations in that island. I shall proceed in the next section to examine more particularly the mode in which the fever is produced, and the manner of its operation on the human body.

S E C T. II.

*Further Considerations on the Causes of Ill Health
—Miasmata considered, and the Effects of
Moisture—The Effects of Debility on the Vas-
cular System—Determinations arise from De-
bility—Chemistry the great Source of Im-
provement in Medicine—Yellowness not al-
ways caused by Bile.*

IN enumerating the general causes which produce, or rather dispose, to ill health, at St. Domingo, I omitted to mention the Land Winds, which prevail more particularly in June and July, but are more or less felt throughout the year. These breezes blow in the morning, and have a pleasing coolness at an early hour; but they sometimes continue for days, and even weeks, and as the day advances become hot, drying, and unpleasant, resembling the *Siroc* of Naples. These winds suddenly check perspiration, the great source of coolness and health; the skin becomes parched and dry, and there is usually a sense of oppression

in breathing, and a tendency to sigh. These winds very generally excite fever, and bring on paroxysms anew, in convalescents. The French shut their doors and windows against them, and go out as little as possible whilst they prevail; but their effects are sensibly felt.

Let us now examine the causes, which more remotely seem to produce the fatal fever in question. It would seem that it arises from elastic fluids, miasmata, or vapours, applied to the human body, either through the medium of the lungs or skin, or perhaps swallowed with the saliva. This opinion is rendered probable, by observing that the fever arises more frequently, and proceeds with more severity, in situations where a brisk evaporation from stagnant marshes is going forward. It would seem that rain, simply as such, or dew, do not produce any derangement in the human system, except what may arise from simple obstruction and the effects of cold. I have myself been exposed to the dews, without the means of shifting, for two nights and upwards, when a prisoner with the Brigands, without feeling any inconvenience. Doctors JACKSON
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and MASTER were similarly situated, without any bad consequence; and in coming from Jamaica to St. Domingo I have slept several nights on deck, with a very slight covering; I never found any illness result, though I have been wet for several hours. The longer, water has been incorporated with the soil, without fresh rain, the more virulent and dangerous the miasmata become. Thus, the seasons in which rains prevail are found more healthy than when dry weather has continued for any time: in the first case, the rain is again evaporated before the soil has imparted its pernicious qualities, but in dry weather it has remained, so as to acquire the fatal activity it exerts on the system. In what manner the action of the sun, and the admixture of a certain soil, produces this activity, can perhaps, scarce be explained in the present state of chemical knowledge. It must be admitted too, that fatal miasmata arise where there are no very certain appearances of a marshy soil. The Mole and St. Mark's, do not appear surrounded with marshes, yet the fever reigns in both these places with great activity. Miasmata may certainly be wafted with the land breezes in some activity to a considerable distance; they
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are undoubtedly more powerful the nearer they are to their source, and in time become changed by admixture with the atmosphere and distance from their origin. Thus ships, lying in harbour at a certain distance from the shore, are liable to the fever of St. Domingo, but if they go to sea, or cruize at a greater distance from the land, the crew become more healthy, and less obnoxious to disease. It is not to be doubted but the sun acting on moisture, almost in any soil, will produce disease. The grand defect in our knowledge, arises from our being ignorant of the particular nature, of the elastic fluid or miasma; which arises from marsh. If this point was once ascertained, we could reason on the varieties produced by a difference in the soil, and the less or greater action of the sun; so as perhaps to throw some light on varieties in disease, which seem to arise from these causes. How these miasmata or vapours produce their effects on the body is not distinctly known. Let us attend to the phenomena which they produce, and try to account for them on principles already ascertained, or rendered highly probable, from the phenomena themselves.

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The first evident effects are, debility and languor in many of the important functions of life. The vascular system, in some of its subordinate divisions, appears greatly weakened; for although there seems a degree of excitement and action, yet irregular determinations of blood take place to various important organs, such as the head, stomach, liver, and lungs.—Determinations of blood cannot happen to any particular organ without debility in some part of the vascular system, which destroys the balance established for a just circulation between the propelling power of the heart and the resistance of the arteries. In ordinary cases, where the propelling power of the heart is not altered, if there is any weakness in a particular set of vessels, a determination happens; but in cases of fever, whilst the vessels seem to lose greatly their resisting power, the energy of the heart is remarkably increased. From this cause the danger of determinations during fever is greatly augmented. In what direct manner all this is produced eludes at present our keenest research. It would seem, at times, that the miasmata attacked at once the very principle of life; from the beginning, in such cases, all energy is subdued, and the sufferer gradually perishes under

under a sense of oppression only, and a slow diminution of animal powers.

Many instances of this kind occurred, which at first, flattered the unexperienced spectator, but which struck the attentive observer with impressions of the greatest danger. Where there is a sense of pain and a re-action, the stock of sensibility and vital energy, is yet entire, and may be acted on with some hope; but where these are greatly impaired or subdued, the cause of the disease is powerful, and will in general be victorious. In proportion to the utility and necessity, of any organ to the maintenance of life, will be the danger of a determination to it; thus the brain, the lungs, and the stomach, as being highly necessary to support the living phænomena, are the most dangerous seats for these derangements. In the brain, either its direct functions are destroyed by subtile causes, or by more evident pressure from effusion on it, or by the destruction of its organization. The structure of the lungs is frequently destroyed by the sudden progress of inflammation, which, by diminishing their capacity, and the ease with which their essential functions are performed, has a direct tendency to destroy life, which we
seem

seem to renovate and strengthen from this wonderful organ. But besides the direct influence the lungs have on the vital principle, any impediment in their functions creates new determinations in the blood, and extinguishes life by the slow progress of partial disease.

The stomach, the most important support of all our functions, becomes, in the fever of St. Domingo, a principal seat of determination. Very early in the disease, an immense quantity of blood fills its vessels, inflames its inner coats, and begets in it a sensibility and irritability almost incredible. In vain it is attempted to throw in any medicine, in the most soothing or lenient forms; the most grateful cordials, and the most insipid liquids are thrown up with a celerity equal to an explosion. The effort to reject is made before any thing almost touches the stomach. These efforts to reach are continued often till death. From the great determination of blood, and the violence of the action in the vessels, immense secretions are made in the stomach, which, acquiring there a dark colour from the admixture of other fluids, and perhaps portions of the coats of the stomach, is called

called the Black Vomiting, generally a very fatal preface of the 'event ; at length the coats themselves are separated and detached, and a mortification, affording a temporary suspense from agony, closes the cruel scene.

During this progress there is little remission ; but in general a slight abatement of the symptoms occurs towards noon, and an exacerbation soon follows. What secret law of the animal œconomy influences and determines these periods and fluctuations of fever are not at present, nor perhaps ever will be known. In some instances, where one paroxysm has finished the disease for a given time, the whole would appear to resemble a chemical process, where a certain time was required to complete it ; but the subsequent renewals, and the similarity of the succeeding exacerbation, obliges us to abandon speculative opinion, and confess our ignorance. In violent and rapid cases, where a sudden recovery has happened, it has sometimes been preceded by a tormenting intolerable pain in some particular finger or toe ; at last, a livid spot, with an extended rosy base, makes its appearance, and the disease is gone ; as if a certain chemical combination had happened,
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and the result had escaped by a silent but vigorous effort, like the electric fluid.

On the discovery of the real nature of the marsh miasma, of the various circumstances which affect its condition, on which its strength and noxious powers depend, is founded the future improvement of this intricate part of medicine. That new chemical combinations are formed, destructive to the principle of life, no one will deny, who has seriously thought on the subject; in no other way can the sudden derangements be in any manner accounted for. The mechanic effects of miasmata would, from their very nature, be imperceptible, and, though we are utterly ignorant of the direct chemical changes or processes, yet it may be inferred, with more probability than any other supposition, that they really exist. Chemistry is now unfolding more intimately the nature of the animal fibre; and if human abilities, aided by science, promise any light on subjects which nature has involved in darkness, we may entertain some hope of improvement.—But chemistry mourns the death of LAVOISIER, of him, whose labours made it a new science; and promised to scatter light over the

the darkest investigations. The loss of a man, who devoted his time and fortune to the most enlightened pursuits, with so much happy success, and perseverance, will be felt by future generations, and will descend to posterity as one of the great stains of the revolution.

Many appearances induce us to believe, that very considerable changes go on in the fluids. The sudden appearance of livid spots, the oozing of blood from all the mouth, and its rupture from the nose, cannot be accounted for from the solids only; both are usually affected, and must be so from their very intimate connection, and standing in the relation of affecting each other, as causes and effects of many phænomena.

The yellowness, which is certainly no favourable appearance, and gives a peculiar name to the fever, does not always seem to depend on the mixture of bile with the blood. It is not easy to support the opinion I am about to offer, because the facts which would render it clear are not easily obtained. The same opinion was formed by my friend, Dr. MASTER, before we had ever conversed
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on the subject, and on the same grounds. The yellowness appeared to us, to arise from a change effected in the colour of the serum; dependent on a peculiar action in the vessels; because jaundice, or a mixture of bile with the blood, is not in itself a disease suddenly fatal, or even very formidable; and because, jaundice comes on frequently towards the close of the fever, without producing any danger; nay, it is rather a favourable crisis; and in cases where recoveries have happened, in the yellow fever, as it is termed, the tinge in the skin has continued for a long time without any other of the symptoms which usually characterize, or more immediately attend, jaundice. Dissections have not shown, in fatal cases, any great derangement in the biliary system; no calculi and little preternatural distension or obstruction; besides, the yellowness comes on very suddenly, and to its fullest extent.—There is indeed a gradation as to the places where it begins, before it spreads universally; the progress of it, however, is different from jaundice. The vessels of the eye, give generally the first alarm of that disease; and the onyx of the nails, becomes very soon affected; but in the yellowness accompanying the Remit-

tent of St. Domingo, a different progress is observed; the neck, in the course of the jugulars, the cheeks; in an angle from the nose, forming streaks, give the first intimation; yellow tinges pass along the breast and back irregularly, and the feet are often deeply coloured before the rest of the body is materially affected.— Where the vessels of the eye have been much surcharged, so as to resemble the commencement of real jaundice, with other symptoms proper to that disease, the event has proved, in general, more happy. I have thought too, that the shade of yellow which attends the Remittent of St. Domingo is different from that which accompanies jaundice; perhaps this is a fanciful difference; but what I have stated would seem to indicate some peculiar state of the blood, independent of bilious admixture: future observation may throw more light on the subject.

Upon the whole then, it would appear that miasmata, or particles of elastic vapours, rising from the earth, in the condition called marsh, and acted on by a very vigorous sun, are the remote causes of the Remittent of St. Domingo; and that they enter the human system, either by the vessels of the skin or by the lungs, or mixed with the saliva; that there

there they produce several morbid phænomena or derangements, probably by forming new combinations with the subtile elements of the fluids and solids, and thus become noxious and destructive, by deranging the peculiar organization which produces the living condition. We must lament our ignorance as to the particular mode of operation, but we may observe certain circumstances which strongly influence the issue of the disease or derangement. To mark these is to make some progress. It is true, that I have heard practitioners chatter about diseases with the same facility they spoke of any common incident; they had a cause at hand to explain every symptom, and a remedy, with a string of certain effects to result from it; to use the expression of an eloquent writer, "they seemed to have been in nature's cabinet council:" but from such men little can be hoped; we are all, it is true, in the twilight of knowledge; we see to a certain distance, beyond which all objects appear confused, and blended, and I would not readily believe him who would assert he saw distinctly beyond the common limits of vision. In the next section we shall continue to take a further view of the fever and its phænomena.

S E C T. III.

*Plethoric Habit dangerous in the Remittent—
Young Men more exposed to danger than
others—Women and Old Men escape the
Fever—Practical Inferences from these Facts,
—Scheme of recruiting Men at an advanced
Period of Life.*

IT was remarked in the second section, that a habit full, irritable, and plethoric, afforded the Remittent of St. Domingo an opportunity of manifesting its utmost violence : I shall now prosecute this opinion, and deliver the reasons which led me to entertain it. I have already observed, that irregular determinations, founded on a diminished energy in the vessels of some part of the system, were the first effects of the application of the miasmata to the human body ; the consequent derangements in the organs, to which these determinations are made, form the danger ; the violence of re-action in habits disposed to inflammation is always dangerous, either by aiding the general state of disease, or by producing the direct consequences of inflammation, or rupturing small vessels.

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I have seen many corpulent people in the West Indies, who have endured the climate well, but had not all the characteristics of the habit I have been describing, as rendering the Remittent dangerous. I have founded my opinion, of such constitutions being particularly unfavourable, on the following considerations :—First, by observing always, that when the fever invaded such habits, that it was rapid, severe, and violent : secondly, by remarking that young men, from the age of fifteen to twenty-five or thirty, the irritable and plethoric period, were more severely affected than those more advanced in life : and thirdly, by observing that old men, from sixty to eighty years of age, seem as it were to renew life, and enjoy health in warm climates, better than in any other situation ; and when they happen to be attacked with fever, it proceeds with little violence, to a happy termination. Women too are exempted from the violence of fever, except in particular instances, where intoxication has produced the irritable and plethoric state. Females then, and old men, who are in a condition of body directly the reverse of the plethoric and irritable, do not by any means run the same risque when attacked by this fatal remittent. It is fair

then to conclude, as it is most destructive in the young and plethoric, that something in that state conduces to this fatality. The ease with which determinations are made in these habits to particular organs, and the violence of reaction, seem to me to be the chief sources of danger. In old men the fibre is relaxed, and a new condition brought on, resembling the state of youth ; and, in fact, they become fat in warm climates, and more cheerful ; a new energy is infused in their constitutions, and life prolonged beyond its expected period. These changes would seem to be produced by the relaxing powers of heat, and some secret vital energy connected with it. Relaxation and irritability, to a certain degree, are the peculiar characteristics of the juvenile fibre. How habit, or nativity in particular climates, operate so as to prevent diseases, cannot be explained on any certain principles ; we can only acknowledge our ignorance, by saying, that nature calculates the species for the regions they inhabit, or that we gradually acquire constitutions suited to the climate in which we may be placed.

The doctrine I have been discussing would be of little use, unless some practical inferences could

could be made for the benefit of our troops. If I am right in remarking, that a habit disposed to inflammation. from its peculiar circumstances, is in a dangerous condition, when attacked by the fever of St. Domingo; it will follow, that the troops who are to serve in that country, ought to be made up of men, at a particular period of life: such men too, have the advantage of being well disciplined; their morals are established, and their passions calmed; and they are in every way fitted, for that kind of service; whilst the younger troops, are left at home to be formed and regulated. Men from the age of thirty-five, to fifty years, are in a condition to act in St. Domingo; whilst our youth would be spared and sent to garrisons, where they would be gradually inured to heat, and enabled at a future period to undergo the fatigue of the warmest region. This plan would be of the utmost importance; the elder part of each corps might be thus drafted, and proceed with some confidence to their station. Men, who in colder climates begin to lose their activity and strength, would in St. Domingo be in some degree renovated and rendered again serviceable. By this means the inactive period of life would be rendered useful, and the young and vigorous kept at

home, where their strength could be most happily exerted. I trust this scheme will challenge the attention of our Government; it will prevent many untimely deaths; the service in every view will derive benefit; it will have men on whom some reliance can be placed, when duty requires them to act, and our youth will be saved from the almost certain destruction of the climate.

When regiments are thus formed with a view to the West India service, they would be still more improved and protected by residing in warm, but more healthy regions, before they embark for the West. Gibraltar would afford them a mild seasoning; their vessels would become habituated gradually to expansion, and the skin would be rendered lax and open for perspiration. A period might thus be put to the devastation of that climate, and scenes, the recollection of which shocks humanity, would in a great measure cease.

Before I quit this subject I shall just remark, that men at the age of forty years, seem to me very well able to sustain ten years service in St. Domingo; and as all our garrisons are relieved in a less period, they would possess sufficient

sufficient vigour of habit to go through every toil. In regiments thus organized it might be proper to reward the services of men, who had acted with reputation as serjeants in a warm climate, and give them promotion. The men of character would thus have something to hope for, and their good conduct would meet encouragement in their profession; above all, the West India service would be carried on with success: at present, neither military talents nor numbers are of use; our hospitals contain our garrisons, and the few who carry on duty are languid and convalescent; they are not fit for enterprize or hazard; and nominal armies will never achieve conquests.

S E C T. IV.

*Causes which retard Medical Improvement—
Surgery and Medicine compared—Of proximate
Causes in Disease—Our Ignorance of these
prevents Improvement.*

I SHALL now proceed more directly to examine the Fever, and endeavour to ascertain its class; but before its particular history is unfolded, and the practice is described, it will be necessary to take a view of the state
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of Medical Knowledge. I have founded my practice on our ignorance of Proximate Causes and the positive nature of fever; and it will be necessary to show the real state of that question, before the principles which guided me are understood.

In all medical researches, we have to encounter those obstacles, which render investigation so difficult, in a science, of which the principles have not been hitherto ascertained. The indolent have abandoned a pursuit so arduous, and adopted the reigning systems of the day. The success of the learned and ingenious has by no means been equal to what might be expected from their talents or industry. Medicine, from the days of HIPPOCRATES, has been a system of varied conjecture, which has changed its aspect in almost every age; each century presented to the student novel doctrines, which in their turn made way for others. These changes were influenced frequently by the progress of natural philosophy, especially by chemistry, but more commonly by the ingenuity or caprice of medical professors. It is fortunate, that amidst these fluctuations of opinion and theory, practice was not much disturbed; it held an even course nearly, and though dif-

ferent views were entertained as to the mode in which medicines produced their effects, yet the same prescriptions and mode of treatment obtained amongst physicians whose theoretical tenets were very different; on other occasions a peculiar practice was pursued by individuals, very opposite from what might be expected from the theory they maintained. This was particularly the case of SYDENHAM, as Dr. JACKSON clearly points out. There can be no doubt, however, that a more philosophical and rational manner of investigation has been pursued by the moderns. Facts have been more accurately observed, and experiments made with more precision; the laws of the living body have been more attentively examined, and the principles of philosophy are applied with more caution to animated matter; theory too is made to result from a careful observation of facts; it is what it should be, an induction, and not a pre-conceived doctrine.

The circulation of the blood, as ascertained by the immortal HARVEY, throws light on many of the symptoms which occur in diseases, and of which the ancients must have entertained absurd notions. The progress of time and accident have put us in possession of
many

many valuable remedies totally unknown to the earlier physicians; and the wonderful aid of chemistry is likely to unravel the mysterious laws of the animal œconomy, and throw light on many obscure phænomena both of health and disease. The chemists too have put us in possession of many active powers, with which the human system may be affected, so as to produce changes; and the analysis of various substances, has wonderfully extended our knowledge and increased our power. The numerous discoveries in anatomy have improved physiology and surgery; we have more accurate notions of the seats of diseases, and we can explain more fully the operation of morbid causes. The intercourse between various countries, and the cheapness of printing, have increased in a remarkable manner our stock of facts. The experience of celebrated men, and their observations on the diseases, climate, and habits of particular countries, thus become a general property in medicine, and may be perused by every one who has industry or curiosity. In this manner we are furnished with valuable materials, which may be examined and compared, and from which we may draw important and useful conclusions. The general progress of science has no doubt contributed to
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the improvement of medicine ; but, above all, the institution of societies and hospitals has contributed to correct and enlarge medical knowledge over Europe. In society, the powers of the mind are called into action, doctrines are minutely examined, the ambition and industry of individuals are not restrained by the terror or authority of teachers ; opinions are compared, latent facts are brought forward, and the general result is published for public inspection. The records of celebrated universities will bear ample testimony to the benefit of medical associations ; hospitals too are great schools of practice, where numerous cases enable the physician to generalize, and from a multitude of facts to draw useful conclusions ; it is in such institutions that medicine may receive real improvement ; the physician, free from the fetters which private practice generally imposes, and which the most celebrated cannot shake off without prejudice to their reputation, proceeds with more boldness to experiment and innovation, which, under judicious management, may be pursued without alarming the feelings of humanity. It is to the prejudices of mankind and the fears of practitioners we at-
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tribute the ineffectual routine of physicians, who, fearing the loss of emolument or employment, dare not venture out of their trammels. To this cause alone may be ascribed, in a great measure, the slow progress of practical knowledge.

Upon the whole, however, Medicine has been slowly improving from the days of HIPPOCRATES, though by no means in proportion to other sciences. It may be useful to consider the peculiar causes which retarded its progress; for we find, both among the ancients and moderns, that men of great talents and industry applied themselves to medicine; there must therefore exist some insurmountable obstacles in the science itself. Experiment is the source from which, in other sciences, true or definite knowledge is obtained. In order to attain this knowledge, it is absolutely necessary that the subject on which the philosopher operates, remains in a given or known state, or that its modifications and changes be ascertained by a certain infallible rule. Secondly, in generalising our experience from a few objects of any class, so as to develop the nature of the whole, it is necessary that the few we have examined,

mined, comprehend the laws and nature of all that tribe of objects. If this is not the case, no just inference can be made from the few to the many, nor will experience be useful or extensive; but when the nature of a whole class of objects can be precisely ascertained, by experiments on a few subjects of that class, then, the philosopher can extend his conclusions to the whole class, which he may not have individually examined.—Because, experiments, repeated and confirmed on a few subjects, have ascertained the laws of a whole class, whose essential properties, so far as regarded his conclusions, remained fixed and immutable. It was thus that the immortal NEWTON proceeded, and from the simple laws of gravitation ascertained the complicated motions of the celestial bodies; in this manner other sciences advance more or less rapidly, but with a degree of certainty approaching demonstration.

In medicine, however, although physicians have appealed to experiment, and made conclusions, yet it will appear that their inductions can never be so precise and decisive as in other sciences. When we examine the influence of experience on practice, we find it

general,

general, though the principles which regulate that influence are loosely and inaccurately ascertained. After all the pains a physician may take, in comparing, examining, and discerning in what constitutions agree or differ, he will be liable still to error from the dubious outlines which discriminate different habits, and the indefinite laws which belong to individuals. This reasoning applies to medicine as a science. Surgery is very different. Whilst it prescribes rules for operations, and discusses the best plan for reducing a luxation, or curing a fracture, it is a respectable and useful art, because such reasoning is founded on the almost unvaried structure of human bodies ; but when it deviates into medical reasoning, not founded on these simple principles, it degenerates, and becomes less respectable, because more visionary and uncertain. But to return:

If the nature of the bodies on which the philosopher operates, be either absolutely different each from each, or constantly changing, and if one or more bodies do not contain the collective qualities of the whole, experiments made on a few will by no means be conclusive. In such cases human know-

ledge will be always imperfect. But thus it is in medicine. No number of human bodies possess in all respects the same assemblage of properties; these are diversified by endless modifications. The delicate nature of the human system, the difficulty and danger of making experiments, the impossibility of ascertaining their precise effects, the mysterious phenomena of life, the action of animated matter, its relations and dependencies, form such a chaos as confound and obstruct research; experiments, which in other pursuits may be extended and multiplied, are here limited; and inductions, made under certain restrictions and conditions, cannot be wholly trusted. The human frame, though regulated by some general laws, which belong to the species at large, is also subject to the influence of peculiar ones, which affect the individual only, and which are not the same, perhaps, in any two of the species; hence an experiment, made on a few individuals, and applied generally, must necessarily lead into error. If animal bodies were guided and regulated by general laws only, and never affected by the peculiarities which belong to the individual, then similar powers, applied to such body, would always produce similar

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effects,

effects, and a just induction could be made from a few to a great number, indeed to any extent; but human bodies are governed each by its own laws, termed by physicians its constitution. The shades, however, which mark and discriminate variety, are frequently so obscure as to elude the most acute observer. From this difficulty much confusion arises in practice. Facts remain as such with respect to individuals, but are not solid foundations of reasoning in other cases, to which they do not fully apply, from some subtle unknown difference in the constitution of each, and yet the circumstances may have been extremely similar. Some diseases, essentially different in their nature and causes, exhibit phenomena so similar, that the most sagacious observer is apt to be misled, and thus the efforts of the physician become pernicious or useless.

Similar causes too produce great variety in the effects, as applied to different bodies, according to the peculiar disposition of each. Hence diseases essentially different in themselves, and produced by different causes, are apt to be confounded; and diseases essentially the same, or produced by the same causes,

causes, are judged to be different. Of the first class, continued fevers afford numerous proofs, and remittents and intermittents are examples of the second. The treatment accordingly must be often improper, from the difficulty of discriminating. Our best medical records do not afford complete histories of morbid phænomena; because the circumstances in which the difference of diseases often consists are very minute, and do not readily admit of description. Language has not epithets sufficiently accurate or delicate to impress subtle shades, which the eye of the immediate spectator can hardly catch. I have known physicians predict very exactly the issue of a disease from the general aspect of a patient, and many minute appearances, which they could not possibly describe in words, so as to make another fully comprehend the foundation of their opinion. The physician cannot follow the plan of the natural philosopher; the latter can multiply his experiments on matter, to make extensive and general conclusions; but the former is opposed in his career by the moral and civil institutions of society. If he descends to the brute creation, and seizing a chain of analogy, transfers his induction from the one to the

other, he will be liable to error: the constitution and habits of the inferior animals are so different from ours, that no strict conclusion can be made from experiments entirely confined to them; they cannot be interrogated as to the effects of the powers the physician employs, and our judgment of their apparent feelings must be frequently erroneous. We apply powers to affect a body, whose essential properties are not by any means understood. The nature of the animal fibre, except a few of its phænomena, is totally unknown to us; that elementary constitution, which gives it singular and wonderful properties; has hitherto, and may probably for ever elude research; and when we speak of applying powers, which are to change its peculiar state, we talk a language which philosophy ought to reject.

From our ignorance of the essential nature of animated matter, we necessarily reason falsely regarding the direct changes produced in it, either by morbid causes or medicines. Remote causes of disease often elude the power of the senses; but when they are visible, and subject to examination, as in the matter of the small-pox, we know very little of their
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mode of acting ; we remark, indeed, a number of unaccountable phænomena follow their application to the living system, but that is all.

Such are the boundaries which it has pleased the Author of Nature to affix to our researches. The effects of medicines then must be in some degree vague and uncertain ; but medicines are the power by which the physician hopes to produce changes, or alter the morbid condition. If, however, the state of the animal fibre is unknown, it will be impossible to modify with precision the power which is to change that state. It is not surprising then that medicine should so long be a conjectural science. The unmarked variety of constitutions contributes greatly to embarrass our pursuits. If we possessed a scale, which, graduated like a thermometer, would express the varieties of constitutions, then might a regulated and useful experience be expected ; but, upon the whole, when we consider fully the numberless obstacles peculiar to medicine, it is astonishing what progress we have made. It is unreasonable and useless to expect in medicine the same fixed and invariable principles which result from experiment in other sciences. Whoever directs his attention to

the healing art, must content himself with probability; if he expects to develope or meet certain and immutable principles to guide his researches or extend his conclusions, he will be disappointed. Let us take medicine as it is, nor look for what in the nature of things cannot be attained: it has no fixed principles as a science, nor any pretension to demonstrative evidence. The experience of medicine may still be rendered useful, and the healing art be placed among the pursuits beneficial to the human race.

It has been questioned, whether, on the whole, the practice of physic has diminished the sum of human sufferings, or prolonged life. I, who am willing to give to medicine its full rank, believe it may have contributed to both; but if, on a strict examination, it should only appear to have merely alleviated pain and distress, even then, it has a strong claim to the attention of mankind. It is astonishing that an art, which professes the diminution of pain and disease, should have, in all ages, received so little encouragement from government. In the present century men have arisen, gifted with acuteness and judgment, who have greatly distinguished themselves; they

they have opened the road to truth, and presented to the physiologist views the most interesting and extensive; they have pursued plans of investigation, which promise success, and may ultimately develop the mystic laws and constitution of life. In this walk, DARWIN and BEDDOES, hold the first rank; the talents of the latter have been generously exerted, to banish the terrors of the young and beautiful, in the defeat of a tremendous disease. Let us hope that some fortunate genius may yet arise to dispel the remaining darkness which surrounds us, whose bold and decisive talents will bear down all opposition and difficulty, and in the midst of prejudice rear the durable monument of truth.

Having now pointed out the chief obstacles to medical improvement, I shall proceed to examine our knowledge of Proximate Causes.

CHAPTER II.

SECT. I.

*The Difficulties of prescribing by Indication—
Absurd Reasoning on supposed Proximate
Causes—Morbid Action constitutes Disease.*

IN observing practice, I have remarked, especially in fevers, the vague and fanciful views of prescription, founded on indications. It appeared to me, that without some knowledge of the Proximate Cause, and its mode of operating, we only lost time in combating effects, the source of which was wholly unknown to us. This rendered practice very inert. The physician became either an idle spectator, or interfered in a manner that promised little success, whilst the disease proceeded in its course with little interruption. The history of fevers, from the days of HIPPOCRATES, exhibits only a humiliating account of idle theories and useless systems.

The ancients blended with their doctrines obscure notions from the reigning philosophy, nor have the moderns been much more happy in their investigations. Fettered by a blind veneration for antiquity, as if age could sanction error, they copied the absurd notions of their predecessors. Few of the moderns have any claim to originality; the features of their systems may be traced in the pages of GALEN, and in the writings of ARITÆUS and AVICENNA. The late Dr. BROWN, though by no means a popular character, exhibited to the public the first philosophical attempt of any consequence in pathology; his fate, and that of his labours, have been justly and pathetically described by Dr. BEDDOES; but although his system is by no means free from errors, it is the most comprehensive and enlightened that has yet appeared.

Fevers, however, are still a barrier in medicine, which neither diligence or talents have been able to surmount. Dissatisfied with the present mode of practice, founded on direct indication, let us examine our knowledge of proximate causes; if it appears that we know very little of these, it will also appear that our indications are often ill founded and nugatory.

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The theory of medicine, though considerably improved by a better mode of reasoning adopted by the moderns, is still very deficient. If it be deduced from a number of facts accurately observed, if it consists of the principles unfolded by experiment, and embodied into a general law, then it will justly apply to the explanation of phænomena; but it happens too often, that theory is assumed without attention to fact or experiment, and forms the basis of a system, to which every thing is fitted and cemented, till a flimsy fabric is reared, which the breath of truth blows to the ground.

The theory of the proximate cause in fevers has varied considerably in modern times: BOERHAAVE thought it consisted in a state of the fluids, which itself required proof, and was entirely assumed; HOFFMAN imagined the solids only were concerned; and CULLEN, who copied entirely from him, attributed all the phænomena to spasm. After all these investigations, we are yet to learn in what it really consists. It would be useless at this period to enter on the refutation of these doctrines; I believe even CULLEN's system, which was certainly the most ingenious, has
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now few advocates. It may be remarked, in respect to them all, that effects were seized to explain phænomena, which were in themselves links in the chain of appearances which the remote causes produced. The absurdity of fixing on any intermediate link, to account for all the phænomena, is very evident. We should pay little attention to an artist, who, in explaining the movements of a watch, would pitch on any of the intermediate machinery as the source of the whole. CULLEN's theory had gained considerable credit over Europe, when BROWN's system appeared, which, among other benefits, produced not only a more vigorous spirit of enquiry, but an useful scepticism in system. Before this period, the theory and practice were influenced wholly by the Cullenian school; spasm and its cure were in the mouth of every one, and the pupils of Edinburgh retired from college devoted to this orthodox system.

It is not, however, entirely without use thus to form theories ; opinions new and singular awake genius to examine, confirm, or reject them ; the faculties of the mind are exercised by research, and its powers increased ;

ed; truth may be established, or falsehood detected. When many minds are employed in one research, there is at least a better chance for discovery; the different views in which objects are presented render investigation more easy, and the access to knowledge more simple. To be convinced that we are ignorant is a great step towards improvement, and to discover the insufficiency of a theory stimulates a farther enquiry. In such a collision, a light may at length sparkle to conduct us through the obscure recesses which have hitherto concealed truth; false theories, though dangerous as to their influence on practice, have sometimes been useful, by calling into action the talents of eminent men. To the system of Dr. CULLEN we owe probably the work of BROWN, and certainly the essay of MILLMAN. Let us not entirely banish theory. Even when we cannot clear many doubts, we may thus proceed a certain way, and the journey may be happily finished by a more fortunate traveller. Let prejudice be banished from research, let untenable posts be candidly surrendered, nor let us retain ancient doctrines from an improper veneration for antiquity.

Proximate

Proximate causes have been sought with great eagerness in all physical enquiries ; but the magic connection which subsists between a preceding and consequent effect, has eluded, and will probably for ever elude, our keenest pursuit. Philosophy marks a chain, or uniform manner, in which effects appear to be connected, and calls by the name of cause, an effect which it cannot trace higher, for which it has no antecedent ; and which is followed by a train of other effects, which in their turn become causes, and, perhaps, have no other connection with the highest links than being merely in succession.

When we observe a chain of phænomena uniformly and constantly succeed one another in a certain invariable way, it is customary to place them in the relation of cause and effect, though by this mode of reasoning we lose sight of the highest link we can trace, and attribute all the appearances to an intermediate one, from which we deduce whatever follows. To illustrate my meaning, I shall, for example, take CULLEN's reasoning on the proximate cause of fever. This celebrated professor laid hold of spasm to account for all the subsequent symptoms. Now spasm
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is itself an individual effect in the train of phenomena which the morbid cause produced; for it has been proved very clearly by minute and accurate observers, that other evident derangements are present at the same time with spasm, and are sometimes known to precede and sometimes to accompany it. Nausea, an inexpressible anxiety and uneasy sensation about the stomach, languor, and debility, are perceptible before any marks of spasm have appeared. These are modes in which the morbid cause operates; they are derangements in the usual functions, and in a great measure constitute the disease; but it would be just as fair and as good reasoning to say, that languor and debility, or anxiety, was the proximate cause, and produced all the other symptoms. The truth seems to be, that spasm is a symptom of fever, in common with many others, but not by any means the proximate cause, as Dr. CULLEN imagined. Fever exists and proceeds when no spasm can be traced, nay, when there is positive evidence that it is not present; for there are clear testimonies that spasm, or contraction of the extreme vessels, has taken place without producing one symptom of fever; and there are cases of fever, where a moisture
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has continued on the skin throughout the whole course of the disease, and where it has had that soft relaxed feel that indicates a free exit to the perspirable matter. If the production of spasm was at all times followed by fever, which it ought to be if it is the proximate cause, every immersion in cold water would create a fever; but the salutary effects of cold bathing, and the little danger from accidental plunging, are strong arguments against this conclusion. I have enumerated these objections to shew the little use and fallacy of seizing, for a proximate cause, an individual effect of the morbid power, which has no other connection with the subsequent phenomena than an accidental precedence.

Let us now examine what we mean by proximate causes, and what we really know of them. A proximate cause is that condition which exhibits the morbid phenomena, and without which they could not for a moment exist; it is the final operation of remote causes concentrated so as to produce disease and derangement. No part of medicine is so obscure as this; we are daily baffled in our plans of cure founded on indications, because we reason falsely, and proceed to prac-

tice on principles not established, and altogether unknown. I am not acquainted with one instance in which we distinctly ascertain the nature of the proximate cause; I allude more especially to fevers; we remark, indeed, its mode of operation, and the phænomena it produces, but the peculiar state necessary to give it vigour, and constitute its essence, is totally unknown to us. When we speak then of proximate causes, we speak of unknown powers producing effects which we observe, and operating in an unknown manner, without being able to ascertain the precise condition which exhibits them. These causes are evidently modified, but we are ignorant of the precise and definite modifications. This being the case, the practice of prescribing by definite indication must be erroneous or feeble; for if we do not know in what the proximate cause itself consists, how are we to prescribe means for its removal? and if it be not removed, we do nothing on this scheme of management. An indication is that method which the operation of the proximate cause points out for its own removal. Indications of cure are always supposed to be founded on a knowledge of the proximate cause; they are the obviating schemes which
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we adopt to frustrate the movements of a noxious power; but if our chief attention is directed to a partial effect, the disease is permitted to exert its full strength, and to gain such vigour as not to be readily overcome, by any means we can afterwards employ.—Whilst CULLEN's theory, guided practice in fevers, the chief object was to overcome spasm; and medicines were employed for this purpose, which had no other effect than gradually to debilitate, and render the course of the disease more insupportable; by adding nausea to the catalogue of symptoms. It is true, that we are sometimes successful in practising by a supposed indication; when the indication itself is at least doubtful, and certainly the manner in which the medicine fulfils it. Thus, when a sharp instrument or rugged thorn, has penetrated the softer organs, a locked jaw is sometimes the consequence, after the offending body is removed. On the supposition that this arises from extreme irritability, opium is prescribed, which sometimes happily removes the danger, though the precise manner, in which the locked jaw is produced, cannot be ascertained, nor the operation by which opium removes it. The precise state then, which necessarily produces

and exhibits the morbid phænomena, being unknown, it is impossible to form judicious indications, founded in fact, on a fiction of the physician's. Till the laws of animal nature are more minutely unfolded, we must speculate; and try to enlarge our views in practice. — We have seen that the practice, especially in fevers, though influenced by various theories, has not, for a period of two thousand years, materially improved. Here then the field is left open to innovation; nor has experience, as Dr. BEDDOES happily expresses it, any pretensions to set up to overawe speculation. Where, however, an experience is broad, uniform, and extensive, it may form a guide, which may be followed with little danger; but where experience leads to no useful or decided plan, and where indications are only formed to amuse the practitioner, it is then fair and just to take some other ground, till a position is discovered from which we may successfully play our artillery on the disease.

Instead then of looking to special modes, in which the proximate cause operates, let us direct our attention to its general effects. If we really knew, in any one instance, the direct precise circumstances, which constituted the

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the proximate cause, I am persuaded the Materia Medica would furnish us with means to vanquish it. It is absurd to say, that we know the proximate cause in fevers, whilst these fevers baffle our skill ; because, in most instances, where we form opinions approaching truth, on the causes of disease, we instantly succeed in the cure. The living body, in the state called health, performs its functions with ease and harmony ; every part of the system acts in unison, and agreeable to its nature ; producing pleasurable sensations, and performing every operation necessary to preserve the whole in perfect order. This harmony of animal action constitutes good health ; it consists in a peculiar mode of action inherent, or proper, to the several organs which compose the body ; but there are powers, or causes, which seduce these organs from their obedience to the proper animal laws, and oblige them to deviate into other modes of action, which create derangements, pain, and uneasiness, and which ultimately destroy the system entirely. These aberrations, from the usual movements of the animal frame are termed diseases, and the causes which produce them are morbid powers. The new manner of acting introduced by the causes of disease

has been termed morbid action.—This term was first used by the late celebrated Mr. JOHN HUNTER, whose original and masculine turn of thinking, introduced many new and useful hints into medical and surgical reasoning.

Morbid action is the derangement in the usual functions, produced by the proximate cause.—As we do not comprehend what constitutes the nature and essence of that power, let us try to modify and change the state of the body; so as to render the operation of the proximate cause less destructive. If we succeed in changing the given state of the body, we assuredly change all the nature of the morbid action, so as perhaps to give rise to a new series of phenomena less dangerous than the former.—It has been remarked, that before morbid powers can produce their effects on the body, there must exist between them what Dr. JACKSON calls an aptitude. This opinion is countenanced, by observing, that though men may be exposed to morbid causes, yet it often requires a long time before disease is produced; that is, before the peculiar aptitude takes place, which disposes the system to yield to morbid influence. In our attempts then, to change the state of the system at once;

it is possible the aptitude itself may be destroyed, and the very principle of the disease banished. The influence of habit is most powerfully felt in all the actions of the living system; hence, perhaps, the state of health is so long continued, and is more natural to the constitution. Whilst the movements of the body are harmoniously performed, and possess vigour, it will be more difficult to impress changes; hence a state of vigour is at all times a kind of protection from contagious diseases; but when the actions of the living system are performed with languor and debility, from whatever cause, morbid changes are more readily impressed and adopted; the feeble rivulet may be diverted into any channel, but the vigorous torrent pursues its course, insensible to small obstacles; hence a state of debility renders the system more obnoxious to contagion, or the influence of disease. I am inclined to believe that morbid causes fail in producing disease; not from the want of aptitude, but of vigour in the contagion, or power itself. Many men, for instance, resist the influence of ardent spirits in certain quantities, while others are easily intoxicated; but every man can be overpowered by a sufficient quantity. Those men, commonly called robust, are

not always possessed of the greatest animal vigour; so that this reasoning is not contradicted by seeing what we call stout men readily overcome by contagion. If the physician succeeds in changing the condition of the body, the whole operation of the proximate cause will be also changed. This, perhaps, may be called a random practice; but it is not more so than that founded on indications; and in varying our means, accident may give rise to discoveries, analogies will be seized, and experience consulted, whilst the views in practice are enlarged. In an Appendix I shall endeavour to show, that this doctrine has secretly influenced the practice of physicians, without being acknowledged, and that, in fact, the cure of ulcers, as pointed out by Mr. JOHN HUNTER, was directly founded on this doctrine, as well as the mode of treating intermittents and other fevers.

S E C T. II.

Opinion of the Yellow Fever—It appears to be the common Remittent—It is not the Fever of Philadelphia or Boulam—The Yellow Fever not contagious—Grounds for this Reasoning.

I SHALL now proceed more immediately to the object of this work, the Fever of St. Domingo.

After all the instances of this Fever which I have witnessed, and all the attention I could pay to it, I am of opinion, that it is the common remittent of that country, rendered formidable, by being applied to the English constitution; that the variety, which appeared in its progress, depended entirely on the variety in the several constitutions which it attacked; and that the yellowness, which gives it a peculiar name, only marks its worst stages, and is rather accidental than peculiarly characteristic.

Dr. JACKSON, in his treatise, which contains many valuable remarks, has, with uncommon fidelity and accuracy, noted various species of the Jamaica remittent, which seems to me to have been of the same kind with what raged at St. Domingo, differing only in violence.

Perhaps the immense mortality which has happened in the West Indies within these four years, is to be attributed to the greater numbers who have been sent to that quarter for the purposes of war; for, besides sailors and soldiers, war creates room for a great number of speculators; who follow the army from views of commerce. It must be admitted, perhaps, that the climate itself has changed, and has been more injurious to the European constitution, within this period, than at any former time. What the secret causes of this change may be, we do not know; but it has been remarked in the West Indies, that during these seasons there has prevailed greater heat, and a less fall of rain at its proper period; and I have before remarked, that this circumstance always renders the miasmata more vigorous and active; besides, the climate of the most healthy regions undergoes frequent

frequent changes, for which we are by no means equal to account; many diseases make their appearance suddenly in such places, without our being able to explain, in any satisfactory manner, the means by which they are produced, and they again retire without any evident change in the climate in which they arose, so minute are the circumstances which influence the origin of diseases.

The fever of Philadelphia, which Dr. RUSH has described with his usual accuracy, certainly never appeared at St. Domingo, during the period of my residence; though there are many similar features in the remittent of St. Domingo, both in the symptoms and treatment. One important and striking difference takes place between them; the fever of Philadelphia was remarkably contagious, whilst that of St. Domingo in no one instance manifested that tendency. It is true, that troops have been disembarked at the Mole, and at other places, with a contagious fever amongst them, which carried off numbers; but its type and symptoms varied considerably from the remittent. This latter fever appeared in many of the transports, who had carried it with them from the encampment formed in
Ireland

Ireland previous to their embarkation. From the change and irritability created in all human bodies by the action of heat, the type and form of fevers must be changed in warm climates.

There are few cases of fever, where the pulse is increased, but the hepatic system suffers some degree of repletion, and consequently its secreting powers are increased; hence a degree of jaundice is generally complicated with every febrile complaint in the West Indies; but this transitory yellowness differs very widely, in my opinion, from the instantaneous one which takes place in the remittent of St. Domingo. It is true, that numbers suffered from a contagion they carried ashore with them from the transports; the 96th regiment were almost annihilated by a fever of this description; and other regiments suffered also from the same cause; but contagions must very soon cease and disappear in a hot climate. The principle of contagion must consist in distinct elastic particles, or be associated with moisture, or attach itself to wood, walls, cloathing, &c. from which the action of heat detaches it so as to be applied to the human body in an
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active state; it must be evident then, that, *prima facie*, warm climates are unfavourable to the spreading of contagions; for the action of heat expands, and rarefies, and volatilises all matter capable of evaporation, and by thus blending them with the atmosphere, either alters their qualities entirely or renders them less noxious. Persons, to receive infection, must in general be very near the source of it, so as to be impressed whilst it possesses vigour, otherwise it fails of effect. We remark further, that all the means we employ to purify chambers, hospitals, or ships, and banish infection, are nothing more than creating an artificial warm climate to rarefy the atmosphere. From this arises the benefit of fumigations, which, perhaps, are only useful in proportion to the volume of smoke which issues from them. No one, I presume, will pretend to point out any new combinations, by which the principle of contagion is neutralized or rendered inert. Of other means of preventing infection I shall speak more fully afterwards.

The Remittent of St. Domingo bears no analogy to the fever described by Dr. CHISHOLME, and which he supposes was carried from

from Boulam, in Africa, by a Guinea ship. Dr. RUSH very clearly proves, in his own person, that the Philadelphia fever was remarkably contagious, and he merits the highest praise for his fearless industry amidst so many dangers. Contagious diseases are marked by a striking and rapid progress, from a certain point, in which they have commenced, and from which they extend, without any distinction, to all around them; when they have found admission into a particular district, or family, they lay them waste; and those who are most forward to perform the offices of humanity are unhappily the first to suffer. The friends and attendants of the sick become infected, and perish; the physician himself, more dauntless from habit, is at length scared from his office, and flies the dreadful scene. This misery Philadelphia, in common with Aleppo, has experienced; but no circumstance attending an infectious fever occurred in the remittent of St. Domingo. When a soldier was seized in the barracks, it was not observed to spread in that particular quarter, and sometimes only one was attacked; nor could we remark, when they came into the hospitals, that in one case whatever the contagion was evident. The medical gentlemen could not
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have possibly escaped if there had been any infection; for though they might for some time resist its influence, it is not probable that they would always escape, exposed to the streams of contagion which must have issued from such a number of bodies in its most vigorous state of action; but the gentlemen most exposed to this danger never suffered, so as to suspect that their disease arose from infection. Dr. SCOT, Mr. WARREN, Mr. BUCKLE, and many other gentlemen, who gave the sick the most assiduous attention, escaped this fever, although each of them seldom visited less than seventy or eighty patients three times a day. It is true, Dr. ST. CLAIR and Mr. POWRIE died; but they had been for a long time exposed to the causes of the remittent before they were attacked. Dr. ST. CLAIR was full and plethoric, and by no means a good subject for any febrile disorder; and Mr. POWRIE had been exposed to considerable fatigue. Nor could we remark, in any instance, that the immediate attendants of the sick suffered more than others. The soldiers, who performed the office of nurses, were in general very healthy, and without any fear of contagion. At first, in the ward consigned to my care, I separated the feverish from the
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others, as much as my limits permitted ; but on other occasions I was obliged to blend them with the convalescent ; but I never observed, that in this situation any of their immediate neighbours suffered, or that the fever spread. I was led to consider the disease contagious, by reading the publication of Dr. RUSH ; whose authority must have great weight in all medical opinions ; but the fever he so ably describes, differs greatly from that of St. Domingo. This difference may arise from the climate of Philadelphia, and the variety produced in the constitution ; but our knowledge is too limited to explain precisely the operation of these causes.

There is no point on which I am more decided, than the absence of contagion in the remittent of St. Domingo. The uncertainty of medical reasoning, and the loose principles on which it is founded, has given rise to a variety of medical opinions on almost every subject ; but on this question we were all agreed ; no difference of sentiment, no variety of opinion appeared amongst us. Dr. WRIGHT, who was my colleague, and whose accuracy of observation and strength of judgment entitle him to attention, was of the same

way of thinking ; he had made his conclusions at Cape Nicholas Mole, before I had the satisfaction of meeting him ; so that we could not have biased each other. Dr. GORDON likewise, who had extensive opportunities of observation, and was anxious to ascertain this question, entirely coincided in the same opinion ; and if I recollect, it was also the decisive opinion of Dr. SCOT ; in short, I never conversed with any medical gentleman at St. Domingo, who did not form the same judgment. I had not an opportunity of conversing with the Jamaica practitioners on this subject ; but I have been informed, that on several occasions fevers brought there in ships spread for a little time with great severity. This one feature then greatly distinguishes this fever from that which raged at Philadelphia, or the disease described by Dr. CHISHOLME.

This is a question of the utmost importance to ascertain. If it really was proved, and the proof could not be difficult, that there existed a contagion, our practice and precautions must be different. If there is an infection, it would be useless and inhuman ever to send any European to that climate. Already have groundless fears, terrified and subdued our countrymen ;

countrymen ; and rendered them more liable to fever, and more easily conquered. The name of St. Domingo is execrated, and dreaded by all descriptions. The officer and soldier bound for this service look upon themselves as doomed to certain destruction. The soldiers lose the benefit of their comrades attention ; the officer is approached with fear by his friends or servants ; all the soothing attentions, so pleasing in the sick bed, are banished by terror. The service suffers by these false alarms, which are exaggerated in every narrative ; and conveyed in the language fear always supplies. The climate is, no doubt, sufficiently terrible to the young and vigorous ; many have perished, and will always perish, at that period of life. If the plan, however, of sending men from the age of forty-five, to fifty years, is ever adopted by government ; this mortality from climate will in a great measure cease, and the service will be carried on with more vigour and success ; at any rate it will be pleasing to know, from the united testimony of all the physicians and surgeons who served at St. Domingo ; that the Remittent of that island, called *the Yellow Fever*, IS NOT INFECTIOUS.

S E C T. III.

Causes of the Frequency of the Remittent—Similar Causes produce Remittents and Inter-mittents—State of the Organs in the Remittent—Phænomena in the Remittent—Critical Days—Causes which excite the Fever—Diagnostic difficult—Prognostic.

IT will now be asked, how came this fever to be so frequent, and destructive; if it is not contagious, and what description of fever it really is?

It became destructive, by having a number of strangers presented to its poison; in a condition, unfavourable to their safety. This condition has been already explained, in a former part of this work. The cause which remotely produces this fever is floating in the atmosphere, and breathed by every one alike, or otherwise applied to their bodies. Hence great numbers are seized at the same time, because great numbers are exposed, to the perpetual action of a very powerful agent. This gives the fever an appearance of infection, when it is only the operation of a cause generally

rally acting. Every man is exposed, and probably charged with the miasmata, though we do not know fully the circumstances absolutely required to make them active. Many ingenious, and useful remarks are made by Dr. RUSH on this important subject. I agree entirely with him, that the cause of fever may lurk for a long time inoffensive, till the abstraction of stimuli, or the addition of them, or accumulated excitability, give them an energy and action. As great numbers are exposed then, many must be so impregnated, as really to become feverish; and as the condition in which they are attacked is unfavourable, the issue is frequently fatal.

I have already said, that I think the St. Domingo fever, commonly called *the Yellow Fever*, merely the remittent endemic of the island, applied to the English constitution in a certain condition; and further, that the yellowness, for reasons already alledged, is not always bilious, but an accidental variety, marking only its worst stage, and depending on a change in the serum.—I shall now more fully give my reasons for this opinion; if they are groundless, I shall think myself happy in an opportunity of changing them, for the

more enlarged and correct views of others, who may be more fortunate in their investigations.

I have observed this Fever, with all the attention in my power ; and I have seen it proceed to its fatal termination, in numerous instances, without the least yellowness whatever. Whilst, on other occasions, it made an early appearance, and excited just alarms for the patient ; but when it went on without the yellowness, the same symptoms and movements took place, as when the yellowness was present, except the absence of that formidable symptom. The yellowness, if it really marked a peculiar disease, would have along with it peculiar symptoms, which would give character to it, and regularly attend its progress ; but no such symptoms ever appear. The incessant vomiting is a symptom common to the remittent in both stages, with, and without yellowness. The mode of attack is precisely the same in both forms, and when we succeed in either, the form of practice is the same. There is no separate and distinct type to characterise a new fever, different from the prevailing endemic. The yellowness, appears to me, to mark only an

aggravated case of the Remittent; to be merely a stage of it more replete with danger. The power of the causes produces more manifest changes or derangements; and in whatever manner they are effected, they cannot exist without the greatest danger to the system. There does not exist then a peculiar fever, meriting the name of Yellow Fever, in St. Domingo; it is only a variety, marking great danger, and, in fact, nothing more than the common Remittent.

The fever of St. Domingo I have termed a Remittent, because its type resembles that form more than any other. The remissions, in most instances, are very obscure, and in many not altogether discernible; I have, however, marked them very distinctly in a few cases. They occur, in general, towards noon, and are of more or less duration, according to the severity of the attack; sometimes, however, they are protracted, and happen in the afternoon; but in general some slight alleviation of the symptoms, some relief to the oppression, some diminution in the heat, or in the violence of reaction, are perceptible in the forenoon, and therefore the fever may be called remittent.

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I have for a long time thought, that Intermittents and Remittents arose precisely from the same causes, and only differed in form, as the causes were applied to different constitutions, or as different degrees of the same disease. There is hardly a country in which Intermittents prevail, but where also the Remittent makes its appearance. The mild and confluent small-pox every body allows to arise from the same source; yet the appearances are so different in different constitutions, that they would almost seem different diseases. The Intermittent appears to me only the milder form of Remittent, which in itself is the aggravated stage, as the confluent is, of the mild small-pox. When the cause is not very powerful, or applied to a constitution not disposed to adopt morbid movements of any duration, an Intermittent is produced; but when it possesses energy and strength, or is applied to a constitution ready to revolt from the laws of health, and adopt new movements, then the remittent type is completed. In the milder shape of the Remittent, the same remedies effect a cure; and the more the Intermittent approaches, by having no distinct intervals, to the Remittent, the more difficult and dangerous the case becomes.

The Intermittents and Remittents are generally inhabitants of the same country, and either prevail at the same time, as forms of one disease, or appear to succeed one another, from minute changes in the climate or constitution. I have frequently seen the Intermittent commence the attack, and repeat its form for one or more paroxysms, and afterwards, as the cause gained strength, assume the remittent shape, and prove fatal. On other occasions I have observed the Remitting type at once begin the disease, but mitigating in its progress, either from some change in the atmosphere or constitution, assume the Intermittent shape, and the patient has escaped. They have thus appeared in the same places, and have assumed their respective forms, as varieties of one disease, so as to induce me to consider them as only forms of one fever.

The Remittent of Saint Domingo, attacks at all seasons ; but with more violence and destruction, during the months in which a vigorous exhalation is going forward ; and when the falls of rain are less frequent. From the beginning of May, till the middle of November, the Remittent continues its ravages with unceasing violence ; but when the rains fall
plentifully,

plentifully, and the heat is somewhat diminished, the Intermittent form begins its reign. They generally commence their attack, either in a state of indirect debility, or where there is considerable excitement. The Remittent usually attacks by lassitude, and weariness, or by chilly fits, and slight pains in the bones, with great inclination to sleep, and an unaccountable listlessness to every thing around. At other times it is ushered in by a regular paroxysm of ague, which, going through its common course, leaves the patient languid and weak; in this state the Remittent assumes its proper form. The pulse, at times, is little altered, and no great change in the heat of the body; but the eye has an expression of anguish, sometimes of ferocity, and a certain grimness takes place in the countenance, as Dr. JACKSON has remarked in the fever of Jamaica. In some instances, the pulse is oppressed and contracted, and the patient is under the influence of very low spirits, and inclined to sigh; in others, the pulse at once is hard and full; the face flushed, and the patient complains of intense head-ach. These several modes of attack are not uncommon. The patient continues in this state during the night, and at times enjoys a calm sleep,

at times suddenly starts; and forgetting where he is, sees himself assailed by dreadful phantoms, and wishes to rush into the street, or jump through his windows. When recollection returns, he usually falls listless, or sullen on his bed; and, sighing, sleeps again. During this time all the secretions are considerably disturbed; the urine is in small quantities, high coloured, and turbid; perspiration is irregular, interrupted, and in small proportion; the saliva becomes viscid, and the tongue is covered over with a crust of various colours; the bile is secreted in unusual quantities, and thrown into the stomach, from which it is again speedily ejected; the skin becomes absolutely impervious, and feels like a board; no impression can be made on it by any plan of relaxation, or by any stimulants we yet know. On the second, often on the third day, the dangerous determinations to the vital organs begin; the stomach is assailed, and its coats affected with inflammation; the vessels of them become distended with an unusual quantity of blood, which throws them into an inordinate action, and gives them all the irritability of inflammation; the whole inner surface of the stomach may in this state be considered as one
inflamed

inflamed surface, to which nothing is applied with impunity; the vessels, thus distended and active, secrete more copiously, and their secretion is poured into the stomach, which acts with violence to return it; and thus supports a constant determination to itself. At length the vessels, overcome by perpetual action, lose their tone, and pour out portions of blood, which, mixing in the stomach with the former secretion, and an addition of bile, create what is termed the black vomiting, a most dangerous symptom; because the state necessary to produce it, is a state of the greatest derangement. There are proofs of this progress; the pain and irritability of the stomach, and the great secretions in its cavity, argue, in the most decided manner, that the blood vessels are surcharged, and in a state resembling inflammation: that this is really the case, appears from dissections, which show the inner coats of the stomach peeled off, and separated. This could not happen without organic læsion; and such læsions are commonly the result of previous inflammation, and increased action. In this manner is the incessant vomiting accounted for, on pretty certain principles. That this is really the case, may be further argued from

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the state of the skin, it being found completely locked, and shut up, refusing a passage to its most essential and customary discharge. The urine, in common cases of disease, is increased when the perspiration is diminished, and a balance is supported between them; but this does not happen in the Remittent; for though the perspiration is almost entirely suppressed, the urine seldom suffers an increase. The mass of blood, in these circumstances, must be augmented by the retention of different secretions; the consequence must be, that the weaker or more lax vessels will be surcharged, and suffer all the consequences of inflammation. The liver, the stomach, and the brain, possessing a large system of vessels, in a soft medium, become particularly liable to these determinations; and accordingly we find, that in these organs they really take place. In some instances the patient, from the very first moment, feels only a kind of insensibility; and languishes away his life without any pain. The powers of life, attacked in their very principle, yield gradually to the irresistible oppression, of the morbid cause; whilst the system, unable from the beginning to make any proportionate resistance, surrenders itself to dissolution without a struggle.

During

During this progress, changes seem produced in the great mass of the blood itself: what oozes from the gums exhales the most fœtid odour, and the many spots, which, under the title of vibices, or maculæ, are dispersed over the body; argue some considerable change in the solids and fluids. From the fœtor of the breath, and the horrid smell of every matter issuing from the sick, I think it will be difficult to question the existence of a putrid state. We see that in the small-pox, a matter often destructive to life is introduced with impunity in numerous instances; and I can see no reason why the putrefactive state may not exist, in a certain degree, whilst the living phænomena are going forward. If it be not, a putrefaction in the fluids; we are yet to learn, what it is that produces that fœtid smell; whilst the blood, by issuing from the gums, nose, and anus, seems really in a more fluid state. A laxity of the solids alone will not explain the hæmorrhage, without a change in the blood itself; and should we admit, that laxity sometimes accounts for the flow of blood, we shall be still in the dark as to the fœtor. It may be proper to remark, that I have frequently seen the dying in a

situation

situation I could not approach them, from the very putrid smell of their bodies ; and that, immediately on their death, they were insufferable, and tainted the air to a considerable distance. The appetite is entirely gone, but when in any degree present, becomes extremely whimsical and capricious. The desire for drink is often remarkable ; but small portions only can be swallowed at a time ; and these, unfortunately, are again thrown up with violent exertion. The Remittent is at times ushered in with convulsions, which I have seen repeated at the periods of exacerbation. About the third day, sometimes on the evening of the second, or perhaps as late as the fifth, the yellowness begins to make its fatal appearance in streaks along the cheek, forming angles with the alæ of the nostrils ; they pursue the course of the jugulars ; the back is also tinged in the same irregular manner ; the first streaks extend, and become more apparent ; the vessels of the eye are evidently affected, and in a few hours the whole body assumes a golden hue ; the black vomiting increases, and becomes darker ; the patient feels at once relieved, from the pain in his stomach ; talks of his happy sensations, which, alas ! are only delusive

delusive preludes of his death. The pulse flutters, and becomes feeble; cold sweats break out on the face; the extremities become cold; the eye, inexpressive, and half closed, sinks in the socket; the pulse entirely ceases, breathing becomes laborious, and the rattle in the throat, announces the near approach of dissolution, which a convulsion generally closes.

I have seen cases where a total insensibility has continued for several days, whilst the pulse supported considerable strength, attended with active hæmorrhage from the nostrils, without affording relief; and yet the patient has recovered. One case of this kind I attended with my friend, Dr. WRIGHT, where these symptoms proceeded for several days in the manner above described; but our patient happily escaped.

It was impossible at times to mark any particular critical days, as deaths and recoveries happened irregularly, without any evident election for particular periods. The fifth day, however, the seventh, and the eleventh, appeared in some degree critical, though not by any means in a certain invariable order. I
have

have seen the fever proceed, without any great violence, to the twentieth day, and yet, after all, prove fatal at a time when hopes were entertained of a full recovery. In such instances, either the patient was cut off by the gradual and slow diminution of animal powers, or a sudden exacerbation has at once extinguished life. In slow cases, the powers of the human system are insensibly wasted, and when any exciting cause is applied, there is no vigour left to combat the disease. In a state of debility in warm climates, there is nothing left to renovate the dissipated strength: the causes of relaxation are continually applied, whilst the body is weakened in all its functions; hence very few complete recoveries, from a state of great debility, ever occur, in the West Indies; but in most cases, where recoveries have happened, obstructions are formed in many important organs of the human body; the liver, the mesenteric glands, and the vessels of the skin, are so obstructed, that their usual functions are considerably interrupted; nor are they restored to their common offices, before a colder climate has imparted general vigour to the constitution. Thus, the Remittent of St. Domingo is not only formidable in itself, but also lays the foundation of
many

many other diseases, in the end equally fatal. It may be worthy of remark, that before the Remittent assumed the Intermittent type, a dysentery sometimes intervened, but the Intermittent form generally returned, and after going through some paroxysms, ended in obstinate dysenteries.

With respect to crisis, in this fever, it was seldom very evident ; sometimes a profuse perspiration, sometimes the return of sleep, an hæmorrhage at the nose, or sudden diarrhœa, put an end to the disease ; on other occasions, it terminated in jaundice, which came on by slow degrees, and seemed to remove all the febrile symptoms. I remarked before, that in some instances the patient was relieved at once, by the appearance of an inflammatory spot on a particular finger or toe, as if the cause of fever had escaped by an explosion. This remark was first made by Dr. JACKSON, and I have seen several instances to confirm it. I could never observe any remarkable lunar influence over the periods of accession.

With respect to Prognosis, it forms, perhaps, the most difficult part of our discussion. The eye, the most interesting organ on these occasions, which seems as it were to predict every event,

event, is a difficult study ; the minute changes and variations which it undergoes ; which impress the physician, though he cannot describe them, are great difficulties in prognostic ; language has not words to describe these minute shades ; they can only be felt by the beholder. These difficulties will be readily acknowledged, by those who understand the language of the passions, so easily understood, but so difficult to convey in words. From the eye, conjoined with some other circumstances, I generally drew my prognostic, and I was, unfortunately, seldom deceived in my opinions of danger. It must be acknowledged, that I have met with a few cases, of which I had formed a favourable idea, which afterwards proved fatal ; but they were few in number, and occurred in my first acquaintance with the disease.

But the Diagnostic of the Remittent is equally difficult ; nor do I now know decidedly any clear and precise mark or symptom by which its commencement could be invariably ascertained. The anxiety of friends, and the decisive steps a physician would take to oppose danger, render the science of prognostic of considerable importance ; I shall
briefly

briefly state the circumstances on which I usually formed my judgment, as to the issue of a case.

The youth of the patient, and a plethoric state, were invariably circumstances of danger. The state of body, in which the patient was at the moment the disease invaded him, influenced my opinion of his safety. If it came on, after the indirect debility of a debauch in wine, and sitting up late, there was always very considerable danger; nor do I recollect almost an instance of a favourable termination, where the fever thus commenced. I remember being once present at the flank mess, on the Hill, at Port-au-Prince, when considerable quantities of wine were drank, and the party sat up very late; my duty required me to leave them at a seasonable hour; but three of the party, were next morning seized with fever, and two of them perished on the fourth day. I think it necessary to be thus explicit on a subject that so nearly interests us all.

When the fever made its attack, after being exposed to great fatigue, and the action of the sun, it was always attended with danger. If the person attacked was habitually subject to

apprehensions of danger, and low spirits, the issue of the case was rendered very doubtful. If it made its appearance in habits not circumstanced as I have described, the danger, *cæteris paribus*, was considerably diminished. Combining then these considerations with the actual morbid phænomena in the individual, I formed my opinion, which, in most instances was correct.

The morbid phænomena, which indicated great danger, were the following: such an oppression of all the functions at once, as greatly impeded their action; the pulse being enfeebled, and the strength at once remarkably diminished. Suppressed animal movements, and a general carelessness as to the event, indicated no favourable issue; in fact, where the constitution made no resistance, and seemed at once, as it were, vanquished and subdued, there was more danger than even in a violent re-action. Because it argued the complete energy and vigour of the morbid cause. When the patient changed his natural manner of lying in bed, and assumed any whimsical or unusual position, it was no favourable symptom. Sighing indicated danger; it did not seem to arise from meditation on the disease, but involuntarily, from
from

from congestion about the vessels of the heart and lungs. The fæces and breath being remarkably fœtid was a fatal symptom frequently; nor were hæmorrhages from the nose, if they were repeated, signs of safety. The tongue afforded also some signs to assist the judgment: if it trembled remarkably on being thrust out, it was unfavourable, or if it was covered over with a leaden coloured crust, whilst the edges wore a brilliant red appearance; a brown or bilious crust is not so formidable, especially if it appears loose, and easily separates when touched. The violence of the general symptoms is commonly attended with danger: vomiting, head-ach, great prostration of strength, when long continued, are symptoms of great derangement, and argue an intense disease. The nervous symptom affords many alarming signs of danger. Tremor of the body when moved, with a tendency to faint on slight exertion, justly alarm the observer; the fierce delirium, which proposes heroic action, and raves of battle, is less to be dreaded than the low, muttering, grim, melancholy, which is lost in meditating wrath, without an attempt to move. But above all, the eye affords the best means of judging, in conjunction with the several symptoms already mentioned: a

certain pensive sadness in its glances, an expression of anguish unspeakable, a languor in its movement, an inclination to shut out all objects, are signs of the greatest danger, especially when combined with many of the circumstances above stated. But no description will make the physician fully comprehend what has been said of the eye, unless he has watched it at the patient's bed-side. I have seen a physician so inattentive to the circumstances of prognostic, that he has given out, that a gentleman was recovering, and much better, who was expiring as he was relating the story. This is attended with bad consequences, and brings ridicule and want of confidence on the profession. The most attentive observer will speak with diffidence, but he will often approach truth, and be fortunate in his conclusions. Successful prognostic begets confidence in the opinion and skill of the physician, and proves to the world that he is not inattentive to the phænomena before him. I have omitted to mention, that the features in general, constituting with the eyes what is termed the expression of the countenance, are of the greatest service in prognosis. A countenance little altered in the general expression does not indicate danger, but where the fea-

tures lose their peculiar cast and character, and have no expression at all, or appear vacant, considerable apprehensions are to be entertained. When the features express anguish, grimness, or distress, of which the patient himself does not openly complain, though they seem printed on his face, there is considerable danger, especially if sighing is added to the catalogue. There is little to be learned from the pulse; I have seen an intermitting one precede a happy crisis; in general, it is more favourable when strong, than even when full, slow, or equable: when the pulse is not much changed, and when that change is to feebleness, the heart is subdued, and its powers and action diminished.

I have now given the circumstances from which, in general, unfavourable opinions may be formed, though they are not in every case positive or decisive; yet from the combination or presence of a great number of them, a very probable judgment may be given.

Having spoken of the symptoms and appearances, on which unfavourable opinions of the patient's fate are grounded, it will be proper to state the circumstances which afford

some hope of recovery. The absence of the symptoms already detailed, affords some prospect of a favourable issue. When the disease attacks a person, not particularly plethoric, or weakened by fatigue, or enervated by debauchery, and where there is a moderate action, and the senses entire, he is in a condition to make a successful resistance. If the remissions are distinct, and the secretions not remarkably changed or impeded; if the fever appears inclined to the Intermitting form; if sleep refreshes; if the mind supports its vigour, whilst there is a sensibility to danger, the circumstances are still more favourable. A deafness occurring in the progress of the disease is not an unfavourable symptom. The gradual return of perspiration over the body, especially towards morning, is also favourable. Eruptions about the mouth and face, with considerable pain and inflammation; a brownish thick crust on the tongue, disappearing from the edges, but leaving them of their natural colour, are no unpromising appearances. Moderate thirst, and moderate heat, without that intense, burning feel, many patients complain of, are promising symptoms.

The natural discharge of the fæces and urine, without extreme offensive smell, and of a natural

tural consistence and colour, leads to a favourable prognostic. The coming on of jaundice, towards the close of the fever, in a gradual manner, is by no means an unpromising symptom. The return of moderate appetite, and a desire for acids, in the course of the disease, I have often found very pleasing presages of recovery. The eye, and the countenance, preserving a steady unclouded aspect, animated by hope, and undepressed by terror or apprehended danger, afford the most certain assurance of a happy termination.

I am aware, that all I have stated forms a very imperfect history of the favourable and unfavourable circumstances, which may influence the judgment of physicians. Observations, and an opportunity of recording them, and multiplying them, can alone increase our stock of knowledge in this most useful branch of medicine. It certainly admits of great improvement, and forms, perhaps, the most useful and interesting part of physiognomy. By this improvement, we might hope to foresee, at an early period, the force of the disease, and be enabled to apply suitable means, before it attained that strength, which we could foretell in its infancy. This certainly would be a

great advantage; though, I fear, we shall never attain that perfection in it, which LAVATER fondly thinks attainable. We should indeed be perfect, if we could trace in the features, the small-pox lurking in the habit; or the Remittent, before it produced its peculiar symptoms; but a knowledge of prognostic, far more limited, will be very useful to the physician.

S E C T. IV.

Two Cases of the Remittent—French Treatment of them—Dispute in Jamaica on the Nature of the Fever—Practice of the Gentlemen at St. Domingo—Various Remedies examined—Calomel; Blood letting; &c.—Cases detailed—The Practice pursued by the Author after long Experience—Comparative Success of this Method—Practical Remarks.

IT is now time to come to the treatment of this fatal disease, which made so many cruel ravages among our troops, and carried on a destruction almost equal to the plagues of Aleppo.

On

On my first arrival at Port-au-Prince, I had few opportunities of seeing the fever; but very soon, a young gentleman, in whom I was extremely interested, had a serious attack; he complained of a pain in his bones, and a very severe head-ach, with an inclination to vomit; and before I had seen him, though I might probably have recommended it at that period, he had taken an emetic, which operated well, but unfortunately excited an irritability in the stomach, which I could never afterwards subdue. As these symptoms continued on the third day, with a full, hard pulse, and he had just landed from Europe, I directed him to be bled, and accordingly he lost twelve ounces, which afforded him sensible relief. He was about twenty-one years of age, rather plethoric, and somewhat timid, from the histories he had previously heard. Anxious to do every thing in my power for this amiable young man, and not choosing to trust myself in the treatment of a new disease, I begged Monsieur PERE, formerly king's physician under the French government in that island, to pay him a visit; he accordingly came, and ordered him large quantities of lemonade, three injections in the course of the day, a warm bath,

bath, and another blood-letting in the foot, in which he placed considerable faith in making a revulsion from the head. As I trusted to the long experience of Monsieur PERE, in this disease, I did not interrupt any part of his treatment. On the night of the fourth, he ordered him a bolus of camphor with a small addition of opium. On the fifth he was visited again, when I found a considerable degree of coma present, and a low, rapid, muttering voice. The circulation was diminishing, and vibices made their appearance on the neck and back, intermixed with spots perfectly black. In this situation, after the tepid bath, I directed four blisters to be applied to his ancles, and the inside of the thigh, and sinapisms to the feet, whilst he swallowed occasionally a little æther and cinnamon water; but all was in vain, for the case terminated fatally on the same evening. In this case there was no yellowness during the whole course of the disease, nor any distinct remission, except the abatement which followed the blood-letting.

Another young man was taken slightly ill, on board ship, a few days before, but did not judge it of any consequence, attributing

his head-ach and lassitude to a long walk he had taken, exposed to the sun. He was about twenty-one years of age, very robust, vigorous, and plethoric. He had been three days complaining, when I saw him. I ordered him on shore; he seemed better for the agitation of the carriage in bringing him to a lodging. He was bathed in the evening, and I ordered him twenty grains of James's powder, and eight of calomel. This medicine operated well, producing a perspiration and several loose fœtid stools. During the 4th, he was tolerably easy, and drank very freely of lemonade. On the 5th, there was a tendency to coma; and the vomiting became at the same time very distressing and incessant. In this situation, though I had formed no plan of general treatment, I applied a large blister over the region of the stomach, ordered him at the same time an injection, and took eight ounces of blood from his arm. The irritation still continued in the stomach; but as the blister produced its effect, the vomiting gradually abated, and at length entirely ceased; the coma was diminished, and the pulse acquired more vigour and regularity. During this process, there was no remarkable heat, and the skin had not that locked feel, so evident in

in many cases of this disease. He passed the night of the 5th with more comfort than any previous night since he had the attack. On the morning of the sixth, the vomiting again made a slight appearance, and he complained, that whenever thirst obliged him to drink, it gave him great pain, as he felt his stomach beginning to contract, how soon the liquid touched it. This day I prescribed him small draughts of cinnamon water, extremely weakened by dilution ; to which were added a few drops of laudanum. These remained on his stomach, and gave him some relief. I begged of him to avoid motion, and to drink as little as he could, for fear of bringing on again the irritability of the stomach. The tepid bath was repeated ; but now the skin became impervious, and felt dry and husky ; I remarked too, the vessels of the eye becoming tinged with yellow. On the morning of the seventh, the yellowness had become more evident, and had tinged the skin and nails. He felt very much relieved from pain, his recollection was clear and unclouded, and his mind had all its wonted energy ; but his pulse was low, fluttering, and quick ; he complained of sharp pains in his bowels, and some difficulty in making water. I ordered his belly to be well fomented,

fomented, and directed him to get an injection with fifty drops strong infusion of opium. Throughout the day, he was very much relieved, but, towards evening, a violent purging came on, the fury of which nothing could restrain; he was every moment up, discharging small, fœtid, liquid stools; whenever he tasted any thing, it seemed to pass through the intestines with inconceivable rapidity. I tried every means I could possibly devise to stop this purging, by directing the circulation to the surface, by diminishing the irritable state of the intestinal fibre, and by astringents, after the manner of Dr. MOSELY. I could not unlock the skin, which resisted the warm bath, and the action of internal diaphoretics; I could not diminish the irritability of the intestines; nor did astringents prove of the least utility. Whilst the disease was thus holding its victorious career, he became, in a remarkable degree, attached to wine, and intreated me, in a manner too earnest to be refused, to let him have some. I had heard of cures performed sometimes from this delusive call, as if it were the voice of nature, prescribing to herself; and I accordingly indulged him with such portions, as I conceived he might bear without exhausting

hausting him; he seized the wine with avidity, pouring on me many benedictions for what he termed the only gratification he could enjoy. The disease, however, continued to increase, his senses gradually decayed, he passed his faces in bed without any sensibility, and, altogether, became the most distressing spectacle I had ever witnessed. On the twenty-first day from the commencement of the disease he expired, whilst, in a fit of delirium, he was attempting to get out at the window.

Thus perished two young men of great promise; they were the first I ever attended in the Remittent of St. Domingo.

The yellowness in this instance continued to the last. What surprised me most was, the obstinacy of the diarrhœa, which, in violence, exceeded any thing I had ever witnessed. Since that period I have seen many cases of the same kind, which lingered on to a much longer period, but generally proved fatal. In the house of Mr. DALTON, a respectable English merchant at Port-au-Prince, many of his clerks and assistants perished very soon after they landed; indeed, as he assured me,

me, hardly any escaped, who were attacked. These gentlemen had all been attended by a French physician. From the specimen I had seen of French practice, I was not much inclined to pursue it further; nor did their success in any part of the town justify any one in following them. I saw before me a very vigorous, powerful, and fatal disease, which performed its operations suddenly, and seemed to require the most powerful means to oppose it. Vigour of disease always requires vigour of treatment. I saw in the French practice no power to change the state of the body; I could observe nothing but a temporising system of nursing, and the disease committed entirely to its own course. I applied myself to such books as were within my reach, but they seemed to converse about other forms of fever, than those before me.

About this time, a most illiberal controversy was carried on by the practitioners of Jamaica, relative to the best mode of practice in the Remittent. The object of this dispute did not seem to be the discovery of truth; it became the means of expressing personal resentments, and rival enmities. Such disputes, conducted on these principles, always
disgrace

disgrace a profession, and bring the combatants into some degree of contempt. Public confidence is lost in men, who are declaiming against each other, and supporting opposite systems of treatment in the same disease. The advocates of each system were keen and active to enlist partisans under their banner, and, in the eagerness of party, truth was warped and perverted. The disputants in the Jamaica controversy, in the warmth of resentment against each other, forgot one general truth, that the least reflection might have taught them; they forgot, that in a disease, which attacked so many various constitutions, in a great variety of circumstances, no one, uniform, invariable mode of treatment could possibly take place with any chance of success. There cannot surely be a plainer maxim, than, that as circumstances and constitutions vary, that the treatment must vary also; but the practitioners of Jamaica universally ranged themselves under two banners; the one maintained the particular efficacy of mercury in all cases; the other, with equal ardour, maintained the superior efficacy of blood-letting, and other antiphlogistic remedies. I had the good fortune, before I quitted the West Indies, to
meet

meet several reputable practitioners in Jamaica; and could not help regretting, that their talents had not been better employed, than in a virulent dispute, which could not add to our stock of knowledge.

It was difficult to draw any conclusion, from the facts exhibited in this discussion; each party, as might be naturally expected, produced instances of recovery, under opposite modes of treatment, which each attributed to the benefit of their peculiar management. That men recover under very opposite circumstances will not be questioned, by any one who has seen any practice; because, though the general outlines of a disease may be similar, there exist minute shades, which justify a different treatment. The constitution of two patients, under the same form of fever, may be widely different, and consequently a variety will be produced in the effects. Besides, opposite modes of treatment, supposing the cases, to be the same, may cure, because each mode operates a total change in the given condition of the body, and thus banishes the morbid phenomena; so that neither of the systems pursued in Jamaica, derive any great support, from this casual success. If I recollect right, the successes of each seemed nearly
I balanced,

balanced, if we may rely on the news-paper accounts published at Kingston.

Puzzled, and dissatisfied with these accounts, I betook myself to the study of the disease itself; till the phænomena should teach me something of their nature, so as to form a mode of treatment. Soon afterwards, I had occasion to visit some sailors on board Mr. DALTON's ships in the road; they had been ill for some days, before I saw them, as it is the manner of seamen, to conceal their diseases, till they can no longer be kept secret. I found several affected with a smart fever, the pulse quick and tense, the countenance flushed, attended with a considerable degree of head-ach: one or two indeed were in a different situation; their countenance expressed anguish, they sighed, instead of respiring, and the pulse was low and feeble. In one of them, the hiccup had just begun. The first I directed to be bled pretty freely; and to take fifteen grains of James's powder at bed time, to which an emollient injection was added. They were considerably relieved; some degree of perspiration had been produced; and the head-ach was diminished; but they were extremely weak, and in one of them some yellowness appeared. To the other two I prescribed a large blister each, over the region

of the stomach, with a camphire bolus, and a small portion of opium. When I returned next day, I found one of the latter had expired towards morning; and the others were considerably relieved. They, however, recovered after a long convalescence.

It was a practice followed at Port-au-Prince by the medical gentlemen, when I first arrived there, and I pursued it also, the moment any one was seized, to order him a tepid bath, to cleanse, purify, and relax the skin, so that there might be no obstacle to the free exit of perspiration. After the patient was put to bed, the belly was opened by a lenient injection; and eight or ten grains of calomel with a portion of James's powder, in the form of pills, were generally prescribed, to be taken immediately. These usually procured the discharge of large quantities of bile, either by stool or vomiting. If however this quantity had no effect, which sometimes happened, the injection was repeated, and a larger dose of calomel, joined to some purgative, was again given. If they had still no effect, the doses were still increased, till sometimes an amazing quantity of calomel was swallowed without the smallest apparent effect. At

times a sudden salivation made its appearance, which, in general, put an end to the fever; but which itself became a most formidable disease, which nothing could restrain. It is true, that many have recovered after a salivation was excited, but they are usually thrown into a most dangerous state of debility; from which they seldom attain any strength. One case occurred in my own ward in the hospital, where the patient got entirely well, of the fever, but the salivation resisted every possible means I used, to restrain it. Mild purges, local applications near the mouth, to divert the circulation, strong astringents, all were employed in vain; it proceeded without abatement till the exhausted patient sunk under it. Dr. SCOT visited this person with me, but all our treatment was in vain.

If after these prescriptions, the fever did not abate, tepid baths were repeated, and diaphoretics administered; with mild diluent drinks, and such form of nourishment, as was easily digested without giving uneasiness in the stomach. Such was rice water, boiled to a certain consistence, in which the soluble farina, blended with the water into a cream. This cream was mixed with a small portion of
Madeira

Madeira and sugar, and the patient directed to take small portions of it, as the stomach would bear. If any distinct remission came on, which was rarely the case, the cold infusion of bark, with cinnamon water, or other cordial addition, was prescribed; at other times the decoction. Though I can say little for the efficacy of the bark, except in the Intermittent form. I certainly observed no instance in the Remittent in which I could remark, that it produced any considerable effect at all. Other symptoms were combated as they arose. When the vomiting was severe, blisters were applied over the region of the stomach; injections were prescribed to remove any source of irritation in the bowels, and such drinks were ordered, in small quantities, as were of a nature to produce the least possible irritation. Of this sort, were beef tea, toast and water, rice water, with a little cinnamon boiled in it; and when the strength and pulse seemed to decay, and resist all these means; wine was ordered, and the warmer stimulants, to support if possible the living phenomena. Camphorated bolusses, and blisters to the extremities, were also added to the plan of treatment. Such were the outlines of our general

practice, on my first acquaintance with the disease.

It is to be remarked, that though blood-letting was occasionally performed, it did not become an indispensable part of our plan ; for many instances of fever occurred, where blood-letting did not seem necessary ; the person being previously weakened, by a long residence in the climate, and not in a situation to undergo any considerable loss of blood. Under this mode of treatment, most of our patients perished ; very few, in my opinion, owed their lives to our practice ; and yet we bestowed every possible attention. It is not easy to conceive the situation of a medical officer, placed in such a dilemma, surrounded by hundreds of his countrymen, in every stage of misery, looking up to him for assistance, when he cannot rescue them from impending danger, whilst every scheme of practice, every exertion of thought or industry, every experiment fail of success. It is then humanity, to consider every circumstance, that can possibly afford a chance ; it is then, fair to deviate into new paths of treatment, which cannot be less successful, than what we have already tried. I have witnessed scenes of misery, I can never forget ;

forget; they impressed me too powerfully to be erased from my memory.

It is proper in a question so important, as the treatment of this formidable disease, to be very explicit on every method that has been tried; and to reason on them calmly and fully, before any plan is relinquished that might afford the least chance of success; and also to weigh carefully the grounds on which any new opinions are admitted as foundations for practice: I shall therefore take a view of the success attending the various plans of practice in our hospitals, and, so far as I could collect information, in Jamaica. I must confess, that the plan I shall recommend had not so great a trial, as I might wish; in order to establish it. The opinions and facts on which I ground it, did not occur to me in their full light, until a short period before I left Saint Domingo; so that I had not many opportunities of applying the principles to actual practice; which alone is the true test.

Let us first attend to the plan of giving calomel. The uncertainty of its operation forms in my mind a very strong objection against it; many patients have swallowed some hundred

grains without producing any effect at all. Now the rapid progress of the disease, requires something on which we can positively rely, which will produce its effects quickly, and which in all cases will cause some evident change. If, therefore, a medicine is uncertain in its operation, and does not act speedily, it certainly does not promise to be an useful remedy in a disease so rapid, and of so much vigour. The intestines, by some means or other, are rendered very insensible in this fever, nor are they readily affected by any medicine, whether it is that they are covered over with a large secretion of mucus, which guards their inner surface, or that their general sensibility is impaired, cannot be easily ascertained, but it is a certain fact, that whilst the stomach is agonised and convulsed by extreme sensibility, the intestines maintain the most obdurate inactivity. Aware of this, Dr. THEODORE GORDON, if I mistake not, used unction, and tried in this manner to convey mercury into the system; but the absorbents seemed equally insensible, as in the intestines; and when calomel really affected the system, we could not by any means regulate the effect produced, or know what quantity to prescribe, or when it would act. Whilst we were thus amused,

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looking out for the effects calomel was to produce, we were often disappointed, whilst the disease continued its course without interruption; and when it did produce salivation, the index of its having entered the system, that very salivation became a very serious disease, and left the patient in a state of dangerous debility. But it seldom happened that it produced this effect with any certainty; it much oftener remained dormant in the body, without producing any evident change. A medicine then, of this uncertain description, of which three grains will sometimes bring on changes; when at others, five hundred are taken without effect, cannot be relied on, in a disease, where every means we use, ought to create some alteration in the existing circumstances. But calomel has never shewn any specific power in this disease; its great use has been as a purgative, and perhaps an alterative of the given state of the system. In this view it was used, I think, by RUSH, in the fever of Philadelphia. Nor is it without great use. It clears the intestines from the fæces which would otherwise remain, and prove very injurious; it assists in killing and expelling worms, which are often troublesome; it unloads the vessels, which deter-

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minations may have surcharged; and it may contribute to effect an imperceptible change in the existing circumstances of fever, so as to render it more easy of cure; but, so far as I have seen, it cannot be relied on as a principal agent in the cure of the Remittent.

It is true, that in our hospital, and in Jamaica, some recoveries happened where large quantities of calomel had been taken; but it had produced no visible change in the circumstances of the disease. The Remittent went through its usual revolutions, without interruption, and ceased without an evident crisis. The movements of health ever ready to return, and more natural, from habit, are at hand, to commence their action; when the morbid action is not vigorously supported by the morbid cause. This is a fair, candid account of calomel, so far as I have observed its effects, or gathered them from the remarks of others.

Let us next examine Bark, as a specific, which has been prescribed frequently in the Remittent, and from which practitioners expected considerable success. Whenever the intestines had been previously evacuated; and
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the Remittent had shewn the least abatement in the severity of the symptoms, so as to merit the name of remission, I constantly prescribed the bark, at first in substance, in doses of a scruple, repeated as often as the stomach would bear it. But even these small doses, were often rejected, and left such a degree of sickness behind them, that I was under the necessity of abandoning the bark in substance. The cold infusion, and the decoction, were used instead of the powder, in as large quantities as the stomach would bear, but even this was rejected. I must say that I never saw any instance, in which the bark decidedly put a period to the return of the fever; except in cases where there was an evident tendency to very distinct remission, previous to its use. In such instances the Remittent is inclined to adopt the Intermittent type, and consequently to assume a form less powerful, and more readily subdued by the bark, which in that shape of the disease, enjoys a specific superiority, over any other medicine. It happens frequently, when the Remittent has ceased for some days, that it will again return, with increased violence, and often on such occasions proves fatal. Nothing is so powerful in preventing such returns as the use of the bark; which ought to be begun, the moment

moment the remission is distinct. In instances, where the stomach could not retain the bark; the infusion or decoction, I have directed it, to be given by injection; sometimes in powder, to the amount of half an ounce thrice a day; mixed in three ounces of water, and with fifty drops of laudanum. At other times I prescribed the decoction, or the infusion, repeating the injection oftener. This mode of prescription, I found very useful and successful. The stomach was not irritated, nor did the patient complain of that nausea and anxiety so distressing to his feelings. Every effect, that the bark commonly produces, was thus obtained, in an easy, agreeable form, without giving disgust, which too often arises from the repetition of this medicine. All then, that I could see, in the use of the bark, was, that where the fever, showed a disposition towards remission, or actually remitted, it prevented, on many occasions, the return or renewal of paroxysms. I found it most successful in the form of injection, because in this manner I could carry the use of it much further than in any other way. I had no good opportunity of ascertaining, whether the red or pale bark was most powerful; in the few instances, where I attempted this experiment, I could not observe
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any superiority in the red bark ; it did not appear to operate in lesser quantities ; nor were its effects more speedily produced. But it would require a more enlarged comparison, between them, to ascertain the fact, and a more sedulous attention to circumstances, than I had the power of paying.

Let us next examine the effects of Opium in the Remittent. This most useful medicine, the kind soother of agony and pain, requires to be used in this fever with the utmost caution. I have found the remarks of RUSH on this subject, in the treatment of the Philadelphia fever, nearly coincide with the observations I made in my notes on the Remittent of St. Domingo. In the beginning, I always found it injurious, where restless nights, and anxiety tempted me to prescribe it in large doses. It procured no settled rest ; for a time the delirium was increased, to which a stupor rather than sleep succeeded ; and the next day languor, irritability, and weakness prevailed ; in short, laudanum did not seem by any means to amend the state of the patient. It is, however, a very difficult point to settle, how much of a new stimulus must be given, to do away the
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action of one already operating in the body. Perhaps we fail in our hopes of opium from this very difficulty ; and frequently from giving it in small doses ; but the tendency to coma, and the irritability produced by it, hindered me, from carrying the use of it further, than what the agonies of the patient, extorted from humanity. Opium, unless it is pushed so great a length, as to banish the action of other stimuli, can be of no service ; it is temporizing with the fever ; and lulling the disease asleep, perhaps to recruit its vigour. I have sometimes found it useful, given by injection, in moderating the violence of vomiting ; on such occasions, I have prescribed two hundred drops, in a small quantity of warm water. I have joined it also to antimonials and camphire, not so much with a view to produce a general effect in the system, as to secure the retention of the other medicines in the stomach. In this view I found it sometimes useful. I have seen the Remittent in many instances ushered in by convulsions, which were repeated at the periods of exacerbation ; in these cases large doses, by the mouth and by injection, produced happy effects, and seemed to leave the fever in a more manageable form. In
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cases too, where remissions had commenced, and where a return was apprehended, I prescribed opium very freely; and, as I conceive, with good effects. Towards the happy termination of the Remittent, when the patient was fatigued by restless nights, I found opium of very considerable use; but it was freely prescribed; and other stimulants were given, when it was withdrawn from the patient. Upon the whole, opium cannot in our present state of knowledge be used with advantage, in the beginning of the Remittent; but it is of signal service in many occurrences during the disease.

Antimoniâls, under which we range JAMES'S powders, did not appear to me of any great service; sometimes they produced perspiration, which afforded temporary relief from the symptoms; but they again returned, and continued their course. In my early practice, indeed till a short period before my departure, I was in the habit of continuing pretty large doses of James's powders joined with calomel; and though in general they produced some slight abatement in the symptoms, yet they could by no means be relied on as decisive means of cutting short, the course of the fever.

In one instance, where I had an opportunity of seeing the first evident effects of the Remittent, in a gentleman, who had been a few days landed; I prescribed him twenty-five grains of James's powder, and ten of calomel, after a warm bath: an astonishing sweat was raised, and he had several copious, and bilious stools; there was a complete remission next morning; when he was ordered a scruple of bark every hour, which he continued for some days without any symptoms of a return, and he recovered without any further repetition of the disease. It is probable, that in many instances, we might be thus successful, if we had an opportunity of being called in so early; but it more frequently happens, that the disease has run a course of three days before its aggravation obliges the patient to call for assistance. The first approaches, in fact, are insidious, nor is any one aware of danger; a pleasing languor induces sleep, and a desire to recline, nor is it, till head-ach and pains in the bones arouse attention, that a person thinks himself unwell. At least these were the sensations I felt in an attack of this fever, which soon disappeared. It is particularly difficult, to see the early stage of the Remittent among soldiers.

soldiers. They never complain in the beginning, and have such an aversion to go into an hospital, that they conceal their situation till the disease has confirmed itself in their constitutions. It is not surprising that soldiers dislike general hospitals; they see very few return, who once enter their gates.

Having considered the chief means used to combat the Remittent; I shall now examine the effects of Blood-letting so far as I had an opportunity of observing them. Having been for some years in the habit of seeing the inhabitants of warm climates, I was impressed with one general opinion relative to blood-letting, which was, that the inhabitants of warm climates, after a residence of any length, could not afford to spare blood, from the purposes of the animal œconomy. To this opinion I was led, by observing in general the lax state of the fibres, of those who resided in warm climates; the diminution, or rather the absence of the roseate European bloom; and the great waste of the fluids by perspiration. Besides these considerations; I remarked, that though the inhabitants of warm climates possess great activity; and are more sprightly and lively,

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than the Europeans ; they, by no means possess the same strength. Whether a certain state of the blood, that we call dense, red, and healthy, be the cause or effect of strength in the fibres, may be difficult precisely to ascertain ; but this, we ascertain distinctly, that it is intimately connected with such a state of the body. The state of strength, and rosy colour, are always connected with a dense state of the blood. But the pale relaxed habit never produces, dense and red blood. Physicians have drawn some conclusions from these phænomena. They infer that the first class bear blood-letting, without any material injury, and often with advantage ; whilst the second, cannot bear evacuation, without injury to the constitution. Impressed with this doctrine, I held blood-letting in a warm climate to be in general improper ; without reflecting, that although this reasoning might apply to those, who had for any time resided there, it could not apply to new comers, who had not been exhausted by perspiration or relaxed by heat. Besides, even in the feeble class, who may have resided for some time in a hot climate ; if they are seized with acute diseases, I can see no impropriety in blood-letting ; because this evacuation, by removing

ing a state which would destroy the system, must be less injurious, than a temporary debility. I should not therefore hesitate in some states of inflammation, to bleed freely, even in warm climates. Though I would not push the evacuation to the same extent as in Europeans, newly landed. I am doubtful, whether in all cases of hepatitis, blood-letting be proper; as the inflammation, may be of the passive kind; and mercury seems to succeed in the cure, by its stimulant power chiefly.

From this view of the constitution in warm climates, I was improperly led to consider blood-letting as always injurious, and consequently abstained from it. I found besides, that the gentlemen, who had a longer experience than myself at Port-au-Prince, had not adopted it as a means of cure. The French indeed had bled very freely, at every stage of the disease, but they carried it beyond the proper bounds, and I saw an instance or two, where their patients sunk under this evacuation. The fate of Lieutenant S——, of the 18th light dragoons, was certainly hastened by this treatment. If blood-letting produces good effects, which I believe it does in most instances, it must be performed very early in

the disease, and be performed with boldness. I shall have occasion to explain this more fully hereafter. When I began maturely to consider the disease, and the subjects which it attacked; when I observed its phenomena and symptoms with accurate attention, I then judged that in most instances an early blood-letting might be useful. After I had formed this opinion, the first opportunity which occurred of trying it was on my worthy friend Captain S——, of the Royal Artillery, an useful and active officer. I happened on my return from another sick officer to call on him by chance, and found him with a very smart fever; his pulse quick and strong with intense heat, an inclination to vomit, and his face very highly flushed. Captain S—— was of a florid complexion, plethoric, and vigorous. He breathed with difficulty, and inspired with a sigh. There was some slight delirium, and want of recollection. Having forgot my lancets, I sent a servant for them, and waited by his bedside, till they arrived. Least he should be alarmed for himself at such a measure; for it was a late hour, I proposed it to him, without urging it, as absolutely necessary; he agreed without hesitation; and I accordingly took about sixteen ounces from
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his arm. He was sensible of instant relief; the head-ach abated; the flush in his countenance subsided, his breathing became easy, and his recollection complete. He turned round in his bed, and fell into an easy, profound sleep. I visited him next morning; when I found him much more easy than the preceding day; though the fever had not wholly left him. He had enjoyed a comfortable night, and felt no distressing symptom, except a sense of lassitude and weariness, inseparable from fever. His tongue however had a bilious aspect, and was covered over with a yellow crust. I prescribed him six grains of calomel, with ten grains of James's powder; which operated in the course of the day; and procured the discharge of much bilious matter. The fever became more moderate, though there was for several days a want of recollection, and some degree of delirium present. When the remissions permitted me to use the bark, it was given, and the cold bath completed the cure. Captain S—— was thirty years of age.—The great difficulty in the West Indies, was to procure strength after the fever ceased; this was often unattainable without change of climate.

The next case in which I tried the effects of blood-letting was in my friend Capt. C——, of the 41st, whose exertions at Bizon-ton, and wherever the service required him, at length brought on an attack of the Remittent. It has been rightly remarked by RUSH, that the cause of fever often lurks in the body without being called into action for many days; and I have no doubt, but it may again pass out of the body, without producing any morbid change; unless it be assisted by the addition or abstraction of other stimuli. Of the truth of RUSH's remarks, I have seen numerous proofs. Both Captain C—— and Captain S—— were attacked, after having undergone considerable fatigue on service. They were much exposed to laborious exertion. When I visited C——, I found him affected with a considerable degree of fever; he complained of great pain in his back and loins; and an inability to maintain an erect position. There was considerable heat, and some degree of head-ach. Having a lancet in my pocket, I instantly bled him pretty freely, to the amount of twelve ounces. I ordered his feet to be bathed in warm water, and prescribed one scruple of James's powder, with ten grains of calomel. These produced nearly the same effects

effects as in Captain S——'s case, and he found himself so well in the morning ; that he was imprudent enough to venture out, and ride. The subsequent use of the bark prevented any return. In several cases among the soldiers, I performed the same operation, and prescribed the same medicines, when I had an opportunity of seeing them in the early stage. If the blood-letting is not performed on the second, or at furthest on the third day, I do not imagine it will have success. But in the cases where I had an opportunity of acting on the first or second day, the event was in general fortunate ; though some perished ; nor is it likely that any method will ever be discovered, which shall invariably promise success. But we do a great deal, if we lessen the mortality.

In another instance, in Captain L——, of the 82d regiment, a very stout, plethoric man, whom I saw the morning after the fever had made, its manifest appearance, I directed a very large blood-letting to the amount of sixteen ounces. The blood, as Mr. BELL, surgeon of the artillery, informed me, was fizy. Capt. L—— felt very considerable relief from the evacuation ; the head-ach abated and his re-

collection became more clear; he was even cheerful; and though naturally a timid man under illness, spoke with confidence of his recovery. After the blood-letting he had several injections, and took one scruple of James's powder, without calomel, as the injections had operated very freely. The powder had produced some perspiration, and he was in the evening much better. Next day, however, the head-ach again returned, with some degree of delirium; and the pulse became rapid, and strong. I directed Mr. BELL, to take away eight ounces more blood; and repeat the powder and injections. After this, Dr. SCOT and myself visited him late at night, and found him so free from fever, that we concluded, he had every chance to do well. I never saw him afterwards, having been taken very ill myself that night, and rendered incapable of returning to him any more. I understood however, that next day, he had an exacerbation, and vehemently demanded some porter or wine, which being delayed or refused, he was agitated by a most furious passion, after which he sunk into an irrecoverable debility, and expired with spasms and convulsions. This is not the only instance in which violent excitement has proved suddenly fatal.

fatal. I confess, that his death appears to me, to have been brought about by anger only.

To these cures, too few to form any decisive opinion, I shall add, that Dr. JACKSON, whose sagacity and attention are equally conspicuous, was much more successful, after he made more free with the lancet. The 56th regiment had been suffering from the Remittent very severely at the Mole, both before and after they were landed; they had lost a number of men, but when Dr. JACKSON took the management of the sick, and bled more freely; the mortality diminished considerably. And though the fever described by RUSH, differs materially in being highly contagious, yet there are circumstances of great similitude in the symptoms; and I look on Dr. RUSH's practice as a confirmation of the benefits of blood-letting.

Let us next attend to the effects of Purging in the Remittent. As the intestines, from the beginning, are affected with inactivity, it is necessary that they should be roused by stimuli, to discharge their contents. It has been observed besides, that bile is very amply secreted, and at times passes to the intestines, where
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it would become putrid and stimulant; and would of itself be a source of fever. It is proper then to employ purging to clear the intestinal canal from fæces, which, if retained, would prove an unpleasant stimulus, to the whole system. In such cases of intestinal inactivity and retention of fæces, it is probable that some particles of a putrid nature pass through the lacteals into the blood, where they cannot produce any salutary effect; but contribute to the general irritation then present. But purging is a means of diminishing re-action, and lessening the velocity of the pulse. The increased secretion from the vessels of the intestines, diminishes the absolute quantity of the circulating mass, relieves the vessels from tension, and renders the danger of determinations infinitely less. Purging too, I conceive in many instances may remove miasmata from the intestines, which might add to the severity of the disease. It is a mild species of evacuation, which patients inclined to pass into a low state, bear better than any other. I question, however, whether it be very proper except in the early stage; as it may be the means of increasing the irritable state of the stomach. And besides, as we wish if possible to avoid determinations,

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tions, to the inward organs, it is doubtful, whether purging may not increase this tendency. In this view, it is better perhaps to employ it early; and in the further progress of the disease, to trust to injections. These clear, not only the rectum, the natural depot of the fæces; but a stimulus is commonly applied to the upper intestines, which solicits them to propel their contents. I have, in some cases, placed much reliance on this evacuation; where the patient has been full, but of that habit, which inclines to melancholy, or nervous, and which would not bear the lancet. But I cannot say I have reason to boast of its success.

On the evening of the 17th June, 1795, I was called to visit my friend Capt. I——, of the 69th regiment. I found him in bed, complaining of a dull heavy pain in his head; with a very slight nausea, and a sense of obstruction in the nostrils, as if he had caught cold. He said, the first symptom he had remarked was drowsiness, and an inclination to recline. The pulse was frequent, but not hard, and the tongue slightly furred over, with a leaden coloured crust. The skin was open, with very little increase of heat. Capt. I——
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was about thirty years of age; full but not florid; and of a bilious aspect. I directed his feet to be bathed; and gave him four calomel pills, containing in all ten grains. On the 18th, I called in the morning; the general symptoms, much as on the 17th; the head-ach increased; he had vomited the pills, soon after he took them, passed the night rather restless, and with the pills, had brought up a large quantity of deep coloured bile, but had no stools. I ordered him the calomel again, but in smaller quantities, to be repeated, till some effect was produced. During this day he had twelve evacuations; which, as he said, scalded him in the passage; but the head-ach and drowsiness abated; though there was a kind of stupor still remaining. I wished now to apply a blister to the neck, but he positively objected; and said he only wanted something to procure rest; after the fatigue of the preceding night. In the evening the tepid bath was ordered, and he took at bedtime

℞. Aq: ammon. acet. ℥i.

Cinnamon. ℥ss.

Tinct. op: gtts. xxx.

Sumend. h. f.

On the 19th, found him much refreshed, after a sound sleep, and a glowing general perspiration ; the tongue continued loaded ; and there appeared still, a great determination towards the head. There was a kind of insensibility to common occurrence, and a carelessness as to the event, which I have often seen, a presage of danger. I ordered him again the calomel pills. 20th, he passed the night without any sleep, but felt no pain ; the pills operated towards morning, and produced seven complete evacuations. The heat was nearly natural, the tongue covered with the leaden coloured crust, but clearing from the edges and tip inwards, leaving them of a bright red colour. The head-ach was gone, the pulse 88 in a minute, rather contracted, very little thirst, the countenance dusky and grim, with a strong propensity to sleep.

R. Infus. cort. Peruv. ℥ viii.

Tinct. colomb. ℥ ii.

Aq. ammon. acet. ℥ iiss. M.

Of this he took a spoonful every half hour. During the day, the bark sat easy on his stomach, and he passed a good deal of bilious matter in his stools ; but the pulse became creeping and small, and the skin continued relaxed,

relaxed, without moisture. In the evening I directed him, to be washed with cold water; and to have some buckets of it dashed over him; after which he took at bedtime,

R. Aq. ammon. acet. \mathfrak{z} ss.

Pulv. Jacob. gr. xii.

Tinct. op. gtts. xv. M.

He was ordered wine and water for drink, in the proportion of one third of wine. 21st. I visited him very early in the morning; and found him very comatose, and the pulse just perceptible. I immediately rode off to the hospital, and returned with three blisters and a camphorated mixture. But I found the agitation of death upon him, and he expired placidly and calmly at twelve at noon on the fifth day, from the time he had first complained; which happened one day before I had visited him. It is a curious coincidence, that Lieut. B——, of the same regiment, who was taken ill at nearly the same hour, died also this day, within half an hour of Capt. I——.

Here was a case without any remarkable symptoms of determination, except towards the head, and I am of opinion, it must have been of the serous kind, as the face never appeared

peared flushed or red, which would have probably happened, if the vessels of the head were surcharged with blood. I therefore judged purging the most proper evacuation; though I regretted afterwards, that I had not bled him, and that I had not insisted on applying blisters early. But we always regret where, we are unsuccessful. Another part of my plan was to excite perspiration, and alter, if possible, the given state of the body; when these views failed, I had only to support the constitution and vital powers by such means as are commonly used on similar occasions. In cases like the present, where the vital powers are gradually sinking into a hopeless inactivity; where the pulse is hardly felt; where the patient does not complain perhaps of any pain; I have sometimes used the warmest and most stimulant powders, with some effect. This hint I took from the practice of my learned colleague Dr. JACKSON. I have prescribed brandy with Jamaica pepper, and given pills made up of Cayenne pepper, camphor, and opium. What will not one try, that can afford the smallest chance, in such a miserable dilemma, when he sees the common efforts feeble and useless? By these means, I was once successful, in the case of
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a soldier in the 18th light dragoons, of whom I had absolutely despaired ; the pulse was nearly gone, convulsive twitches, were every where felt ; his extremities were cold, and he exhibited every appearance of dissolution. He took in the course of six hours, 20 grains of Cayenne pepper, six of camphor, and two of opium. The pulse gained strength, the extremities became warm, and the features, which had shrunk, and assumed the aspect of death, began to fill out and have expression ; the anguish in the eye vanished, and in the evening he was able to articulate. This was a kind of resurrection from death. One instance of this sort justifies innovation, and occasional bold practice. His name is FITZGERALD ; and I believe he is now alive with his regiment. When common practice fails, and common expedients ; it is a sacred duty to vary our means, and mode of treatment ; otherwise we become the idle, inhuman spectators of death. It is no argument, to say, that where we have no leading and precise principle to guide us, there must be danger, and we must practise in the dark. In our most decisive practice, there is a great deal we do not accurately know, and were we only to act, where we have these precise principles,

ciples, the case in general would be committed to nature. If we assume the name of physician, let us merit the appellation, and give assistance. We must either act boldly or do nothing. Practice in my opinion, has hitherto been too tame and feeble ; too much has been sacrificed to prejudice ; and a veneration for opinion. We neither think or act for ourselves in medicine.—Fear has depressed us ; and we have surrendered our reason to system and doctrine. Unsuccessful cases, carry perhaps more instruction, than the successful. —We are never to despair ; it is a common, but a good medical maxim, to guide the physician, that while there is life, there is hope ; we ought never to cease to act, whilst the body can be acted on. While the vital spark animates the frame, though it may be dim and feeble, it may be rekindled, and strengthened ; the fibre may again produce the animal phenomena, in their common order ; and the physician enjoy the unequalled happiness of recalling a fellow being to existence. But we are more particularly called on for exertion, in a fever like the Remittent of St. Domingo, which has hitherto baffled every attempt, and committed unheard of destruction ; we will be justified in every expedient, and humanity itself will

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apologise for boldness and innovation. I am not without hope, that we shall yet cure this formidable disease.

We now come to consider the effects of Warm and Cold Bathing in the Remittent. Warm baths have been used in medicine from a very early period ; they were recommended by the Greek and Roman physicians in the cure of many diseases. Among the Greek physicians, there is reason to believe that cold bathing was practised with great boldness ; though they are deficient in detail. In warm climates, tepid baths have always ranked among the luxuries of the great and voluptuous. But independent of the pleasing sensations created by them, they become particularly essential from other reasons. The matter of perspiration incrusts and rests on the skin, so as to form obstructions, and in some degree block up the exhaling vessels. The tepid bath, by washing away these impurities, and stimulating the vessels, enable them to carry on their functions with ease and advantage. It is inconceivable, the hilarity and pleasant feeling, which the warm bath produces. The spirits are enlivened, and a cheerfulness ensues ; as if a burden was removed ;

removed ; as it is often expressed. But besides these evident uses, of tepid baths, in relaxing, cleansing, and stimulating the cutaneous vessels ; there is another purpose of great utility. The warm bath, always increases sensibility, and leaves the body in a situation to be acted on. Sensibility is the great characteristic of animated matter, it is what chiefly distinguishes it ; and forms the great basis on which changes are produced. Without sensibility, we in vain attempt to act on the human system. In this view I have often used the warm bath, and have found it highly beneficial. Cold bathing also has numerous advantages in warm climates and their diseases ; it renovates the strength of the animal fibre ; and by the sudden shock agitates all the vascular system, producing in it, a very quick change. But its chief effects are, to impart tone and strength to the vessels, to invigorate the general system, and by the agitation, remove obstructions in the more minute ramifications, of arteries and veins. In this view, I have found cold bathing very useful. Cold bathing has been of late years introduced into the treatment of fever. The Indians of America, followed this plan very successfully, and in a very curious manner.

They strictly pursued the plan of effecting a total change in the system. Their manner was, to shut the sick up, in what is termed a wigwam or hut. They took a large stone, and heated it in the fire till it became red; it was then taken out and a bucket of water poured over it; the smoke or warm vapour could not escape; so that the patient was not only breathing this warm and humid atmosphere, but was, as it were immersed in it. By this treatment, a perspiration was usually brought forth, in the very height of which, the patient was carried out and plunged into cold water. This practice, which we should consider very hazardous, is said to succeed wonderfully amongst them, and to banish fever in most instances. We do not exactly know the species of fever which reigns amongst them, but from what I could learn, it appears to be of the Remittent form. At any rate, the fact of their effecting cures, in this manner, in the early part of the disease, is perfectly ascertained. It is a daring, bold practice, but if success crowns it, why not adopt it.

I remember when in the East Indies; on board the Airly Castle Indiaman, some cases
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of Remittent occurred at Diamond Harbour, where the company's ships anchor. Several perished in spite of every attention; one of them however in a fit of delirium jumped out at one of the ports. He was immediately picked up, rubbed dry, and put to bed. His senses returned instantly, his pulse became more regular; he fell into a profound sleep; and next morning there was a complete remission. He recovered afterwards very speedily. I recollect another instance perfectly similar, on board the Princess Amelia East Indiaman, in the same place. The Remittent had carried off more than half the ship's company; though every assistance, every comfort the sick could have; was procured by Capt. Millet, the humane commander of the ship. A seaman of the name of Davies, a very stout athletic man, in whom the Remittent had at times alternated with epilepsy, jumped overboard; at the moment he did this, an alligator was along side the ship. He seemed to become at once sensible of his danger, and swam with great vigour till he was assisted. I saw him the moment he came on deck; his countenance, which before was grim and unpromising, assumed a more mild and temperate aspect; his pulse, which had been extremely quick and

feeble, was now flower and fuller; and his recollection, which had been confused and indistinct, became clear and accurate. I directed him to be washed over with brandy, and put to bed; he fell into a profound sleep, which terminated in an universal perspiration, warm, and profuse. The consequence was a very distinct remission, and a speedy recovery.

These cases made a strong impression on my mind, and I was determined to take an opportunity of imitating a practice, which accident had pointed out. I had not then seen the book of my friend Dr. JACKSON. An opportunity was soon furnished, of trying it further; upwards of thirty men were in my ward, at the Diamond Harbour hospital, and I commenced dashing buckets of water over them from some height; but whether the water was not sufficiently cool, or the patients being in expectation did not feel the shock, or that the circumstances were really different; I do not know, but I was not by any means so successful, as I had hoped from the two cases, I have just related. From the time I perused Dr. JACKSON's book, I became more fully persuaded that cold bathing, or rather the dashing of cold water might be made very
useful!

useful in the treatment of fever. And accordingly, I sedulously applied myself to observe its effects. The beneficial consequences from cold water, seem to me to arise entirely from a revolution it produces in the given state of the body; by which the whole morbid phenomena are changed. In the very early stage of fever, before it has established its peculiar mode of action; before the re-action begins, I think the practice of dashing cold water on the patient, may be very useful. But after the fever has established its peculiar morbid action, after the circulation and vessels re-act, after determinations to particular organs have begun, I hold this practice less certain. Because it is not likely to banish the mode of acting then fixed; and the sudden energy of the vessels from so powerful a stimulus, may assist determinations, and promote an inflammatory disposition. Previous evacuation may perhaps guard against these mischiefs. In cases, where sensibility is much impaired, where the recollection is confused, where the system is as it were oppressed, and wants energy to remove the oppression, where the pulse is feeble and frequent, in such cases, I hold the dashing of cold water, to be one of the best and most powerful remedies. The general effects I ob-

served to result from this practice, where it was happily applied, were, an improved recollection, more cheerfulness of aspect; a diminution of heat and anxiety, the pulse rendered more full and equable; a tendency to sleep and perspiration, and sometimes a distinct remission. I have said that these were the general effects, where dashing of cold water on the patient was happily applied. It must not be concealed, that I have used it often without success, in cases, where I promised myself much from its use. I have not at times been able to observe, that it produced any great effect. We have yet much to learn from experience, on this subject. The duration of applying water, the repetition of it, and the peculiar circumstances in which it is most useful, are not as yet accurately ascertained. I am of opinion with RUSH, that it will be most usefully employed, in cases, where there is much diminution of nervous energy. In order to imitate the Indian scheme, as nearly as I could; I often premised the warm bath, and whilst the patient was sitting in it; I had two or three buckets of cold water suddenly dashed on him. I employed the warm bath in such cases, merely to create a greater degree of sensibility, that the cold water might be
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more acutely felt, and produce its change or action, with more certainty. Surprise adds greatly to the power of these remedies; we may often fail, because the patients have summoned resolution to bear the shock. It is often impossible to take them by surprise; when once your practice is known, they expect the cold water, whenever the warm bath is ordered. Besides, it is doubtful whether dashing cold water on the body produces, the full effect of a plunge, by which every point in the system is at once affected; and in the two cases I have related, the cold was longer applied, than it ever is in dashing. These are points, for experience to determine.

In one case, where I persevered, and repeated the application of cold water, I was so fortunate as to succeed; and to preserve to his king and country a very valuable officer, in most perilous circumstances. I allude to Col. H—— of the twenty-ninth light dragoons. His dangerous situation is well known to many officers at Port-au-Prince. Col. H—— is of a thin, spare habit, but active, and rather vigorous. Soon after he arrived at Port-au-Prince, he was seized by the Remittent. From the very beginning the vital energies,

energies, were remarkably overpowered; a delirium commenced with the fever; the pulse was feeble and very quick, the skin dry and locked, and the countenance expressive of anguish and danger. I removed him to a situation, where I could daily visit him as often as his case required. His bowels were emptied, and I directed his servant to expose some buckets of water to a stream of air, in a situation, where the sun could have no access, so as to have it as cold as possible; I then had him brought out into the viranda, and seated on a chair, at a time he was so feeble, that he trembled all over, and manifested a disposition to faint. When seated on the chair, I poured over him a bucket of the water, from the elevation of another chair placed behind him. He was then rubbed dry and put to bed; the consequence was, that his pulse became fuller and stronger, his recollection more clear, and his skin relaxed, with a gentle perspiration over it. This state continued till towards evening, when symptoms of a fresh exacerbation appeared. He was again taken to the gallery, and another application of cold water made as before, with the same effects. The next day, the water was applied three times; on the third some symptoms of determination
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to the stomach came on, and some degree of coma; the yellowness too begun its appearance, and the pulse became fluttering, quick, and feeble. A large blister was placed over the stomach, and one on each ankle; the cold water was again repeated three times; and at each time two buckets of it, instead of one, were thrown over him; the effects were remarkable; the pulse became instantly more regular, the *vis vitæ* was increased, and recollection became distinct. The blisters rose well, the vomiting ceased, and the danger seemed to be averted from the stomach. The application of the water was repeated in the same manner, the fourth day; the yellowness became deep, but a complete remission took place on the fifth; when the bark was administered to prevent any renewal of the paroxysm. This was one of the most dangerous cases of the Remittent, in which I ever saw a recovery happen. I advised Col. H——, to proceed to Jamaica, from which he was obliged afterwards to go for Europe. He was affected with dysenteric complaints, and did not regain his strength. It is with great pleasure I add, that he is now in England perfectly recovered. This was the most decisive case of the effects of cold water I ever met with. I certainly attribute to it,

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the whole of the success. Because good effects so instantaneously followed the application; and I am convinced the remission was obtained solely from this practice.

In the case too of my amiable and regretted friend, Major C——, of the 56th, I had obtained, by the same means, a complete remission; though Dr. JACKSON; from the beginning augured danger. The fever had been absent for two days before we arrived in Jamaica. The inhabitants of Kingston, who used to receive lodgers, were impressed with an idea of the Yellow Fever's being infectious, and would not admit any sick from St. Domingo. I went from house to house to procure accommodations for him, and at length, very late in the evening, I succeeded; after much difficulty. During the day he suffered the greatest anxiety, from an eagerness to quit the vessel, and get on shore; we landed about eight in the evening, and he was conveyed in a gentleman's curriole, to his chambers. At this time he had sufficient strength to walk, and was somewhat cheerful. He had his feet bathed and went to bed. He passed the night uneasy and restless, he sighed frequently, and I foresaw, that the agitation and anxiety he had suffered coming on shore, would
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recal a fresh paroxysm of the Remittent. I called to my assistance Dr. GRANT, an eminent physician of Kingston, and an opening medicine was prescribed. About eleven however, in the forenoon, the paroxysm made a distinct, and formidable appearance; the vital powers, were oppressed and sunk at once; several blisters were applied, and cordial medicines; but all was in vain, the disease baffled every attempt, and this truly valuable man, perished about ten o'clock at night; whilst I was supporting him in bed. This case proves the danger of anxiety and fatigue in recalling the fever to new action; such returns are always dangerous, as they find the patient in a state of great debility.

In another case, Major C—k's, 69th regiment, whom I saw very early in the disease, so as to give the warm and cold bath every fair chance, I proved ultimately unsuccessful; for though at different times remissions were procured, and the strength and spirits seemed to improve, yet the fever still returned. But from the beginning, the deep sighing was present, a symptom I have ever seen formidable; he had at times such distinct remissions, that Dr. JACKSON, whose sagacity is seldom

feldom difappointed, thought he had a fair chance of recovery. In this cafe there appeared fome fymptoms of determination towards the liver, and Dr. JACKSON recommended mercurial unction, joined with volatile liniment, and accordingly a confiderable quantity was thrown in, but without effect. Calomel too had been very liberally employed, a combination of all the plans was adopted, and the dafhing of water in all its forms had a fair, diftinct trial. The fever, however, had its fatal termination on the ninth day. Major C—k had been much exhausted by fervice, he loft his arm in Corfica, and was otherwife much hurt, and had then recovered with difficulty. His habit, was what we call in the Weft Indies bilious, and he had always lived freely. I cannot help remarking here, what I have often witneffed in the fatal cafes of this difeafe; an uncommon calm fortitude, which perfectly forefeeing death, talked of it with the moft heroic indifference; whilft the mind was ferene, acute, and firm. This I have met equally among the privates and officers; and though in the courfe of the difeafe, they have expreffed fome fear of the event, and feemed anxious, yet when it approached the clofe, they became at once

dauntless and indifferent. I have seen men calmly settling their affairs, after the circulation had ceased for hours, to be perceptible. From what this serenity of mind, so general in this disease, has its origin, it is impossible to determine. A few hours before Major C—k expired, I came into his room, he looked at me stedfastly; and stretching out his hand, in which no pulse was perceptible, he said, my time is at last come; my feelings tell me I must die in a very short time. I am obliged to you for your exertions; he called his servant, and asked if a little wine would injure him; I told him not; he desired him to fill out two glasses, of which he begged me to take one, and holding the other himself, he observed, that we had passed many happy hours together, and that he now addressed me for the last time. He drank a little of the wine, gave directions about his burial, shook me cordially by the hand, and turned round in his bed, where he very soon afterwards expired.

I attended another case, with my friend Dr. FRASER, of the 18th light dragoons, whose professional abilities are very well known. This was a case of an officer of great promise,
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in whom all the army felt particular interest. In this instance, assistance was given from the very beginning, and Dr. FRASER judiciously combined every mode of treatment; that had the least chance of success. The dashing of water hot and cold was tried sedulously. Calomel had been given combined with purgatives; blood-letting had been freely used; and towards the close, blisters and cordials, and yet after all the vigilance, and care employed, the patient perished. The situation in which this officer caught the disease, must have given the highest activity to miasmata. The regiment was stationed at a ruined plantation, surrounded on all sides by a circle of marshes, from which the causes of the Remittent must have been constantly issuing in their utmost vigour. The consequence was, that numbers fell down, and Dr. FRASER assured me little impression could be made on them, by any means, he could suggest. Some of them came into the general hospital; they for the most part perished; and we could boast of very little success. But though this proves, that in certain circumstances of disease, we are not always successful, it does not forbid the hope, that we may yet become more fortunate, from further experience. I am still persuaded

suaded, that proper management may do a great deal, and a happy combination of treatment, effect many recoveries. In the efficacy of dashing cold water, I hold very considerable confidence, in changing and altering the given state of the body, and introducing a salutary revolution. In my own case, when threatened with the Remittent, and when in fact, a paroxysm had begun, I found the greatest benefit from vigorous treatment. My head ached severely, the pain in my loins and back were intense, and I felt an almost insurmountable inclination, to recline and slumber. An instantaneous determination had been made to the stomach, and the vomiting had begun: in this situation, I directed my servant to prepare the warm bath, into which I immediately plunged; when I had remained there, about five minutes, I ordered him to have in readiness, three buckets of cold water, drawn from a well adjoining the house, I then sat up in the bathing tub, and in that position the three were poured over me. I felt a considerable shock, and my headach increased to great violence; I arose and was rubbed down with a rough towel, and instantly put to bed. When I laid down, I took a scruple of James's powder. The vomiting had ceased on my

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getting into the bath. My headach abated after laying down, but my servant said that I spoke incoherently. I fell shortly into a profound sleep, and a general perspiration broke out all over my body; when I awaked, I found myself perfectly relieved from all unpleasant feelings, and complained only of a sense of weariness. Some inclination to vomit still remained, but it gradually disappeared; and in the course of the day I was enabled to begin the infusion of bark, and took two pills given me by Dr. SCOT, containing six grains of calomel. I had no returns, and in two days was enabled again to take charge of my ward in the General Hospital. From all the symptoms, I am satisfied, that it was a real attack of the Remittent, and that the change brought on by the bath, procured a happy termination of the paroxysm.

I have now finished the remarks I had to make on the various means used to combat the Remittent of St. Domingo; it would appear on the whole, that blood-letting in the early part of the disease, is one of the best means we have yet adopted; whether by preparing the body for the action of other remedies,

dies, or in its own nature preventing dangerous consequences.

I shall add a few words more on the use of opium, which in a variety of modes has been employed in the cure of the Remittent. In Intermittents, I have seen the use of it, attended with the best effects, administered in the cold stage, in the manner of Dr. LIND. It certainly brought on the hot stage, and conducted it to a happy termination, with great comfort to the patient's feelings. And I have once or twice seen, the return of the paroxysm, entirely prevented by taking a large dose of laudanum. But I must, in the amplest manner, join my testimony to that of RUSH's, in saying, that I found the use of it in the early stage of the Remittent, attended with bad consequences, even, when the pain and restlessness of the patient called on humanity for any means of relief. The headach was always increased, the system in general rendered more irritable, the skin more dry and parched, and an evident debility followed its operation. But towards the close of the fever, where there are symptoms of remission, more freedom may be used, without any bad consequence. And it is a means of accele-

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rating recovery, by procuring sleep, and refreshing and invigorating the system. I shall now proceed to state the treatment I pursued in the Remittent, before I left St. Domingo, and the grounds on which I planned my practice.

*The Author's Treatment of the Remittent,
after considerable Experience.*

WHENEVER I was called to visit a person attacked by the Remittent in the manner already described, if there was any inflammatory disposition, or that the patient was a stranger lately arrived, I instantly bled him in proportion to his strength and the urgency of the case; the quantity can only be ascertained by the circumstances then present, and cannot be regulated but at the patient's bed-side.—No directions can be given in words, that would apply to any number of cases; as minute occurrences often guide the physician. I am however of opinion, that much depends on the evacuation being liberal at first; if the symptoms do not change, and the pulse retains its vigour or increases in strength, the evacuation may be repeated next day, but not so freely as on the first. After the blood-letting the patient was ordered into the warm bath,
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and whilst sitting there, half elevated out of the tub, three buckets of cold water were dashed over him; he was then taken out, and well rubbed with a rough dry cloth, and put to bed well covered; the room was chosen airy and open, and the bed placed in such a manner, that no direct draught of air played upon it. As soon as he was put in bed, an injection was administered, and eight or ten grains of calomel joined with a scruple of James's powder, were formed into pills, and one ordered every half hour till their effects were produced; the patient was permitted to drink freely of lemonade, beef tea, rice or barley water, tamarind water, orangeade, or any light drink that was pleasant to the taste. If the fever did not give way to this treatment the bath and cold water, were repeated again and again, till some impression was made in changing the given circumstances of the body. —The pills too were continued, till the bowels were evacuated, and a disposition to looseness was brought on; and the skin released from that hard crusty feel, so unpleasant to the touch. In general, where I could employ the baths, I directed them three times a day, and uniformly found that good effects resulted. When casual symptoms occurred, imme-

mediate attention was paid to them. Of all the means used to suppress the excessive vomiting and remove the irritation, I think large blisters early applied are the best ; but I imagine we are in general too late in applying them, and permit the determinations to be formed before we attempt to counteract them, when they are too powerful to be removed, and have already produced their fatal tendency. I think in every case, where the slightest irritability appears, nay, where there is none, that a blister should be applied over the stomach, so as to prevent the determination to that important organ ; for what is the pain or inconvenience of a blister, compared with the security that the application may afford. I would recommend then, and I actually prescribed a blister to the region of the stomach on the second day ; this does not interrupt any part of the treatment. When the vomiting has once commenced, the patient should be directed to swallow as little as possible of any drink whatever, but to moisten the fauces and mouth often, to remove that dryness which conduces so much to the sensation of thirst. It is in vain to prescribe the mildest liquids, the irritability is inconceivable, whatever touches the inner stomach is sure to be rejected with violence ;

violence ; and every time the stomach is thrown into these convulsive motions, the disease is strengthened, and the danger increased. Whenever the nausea and pain appear, fomentations should be applied, and continued frequently, after the blisters are even placed, or risen ; very soft flannel may be employed for this purpose, wrung out of hot water, or decoction of chamomile, of which some entertain a high opinion. All medicines should be laid aside, during the height of the irritation ; neither cordials or sedatives will answer the purpose ; I have never met with any medicine that would for any time remain in the stomach. But above all, we are to refrain from the use of purgatives or antimonials, medicines which produce their effects by exerting their first action on the fibres of the stomach itself, especially calomel and jallap.—We are in this stage to trust intirely to injections, and to repeat them often. Broth, and other nourishing liquids may be thrown into the body in this manner, and the fæces may be removed, by adding irritation to the common emollient injection. If the blisters heal quickly, fresh ones must be applied, and the discharge supported by issue ointment. From this manner of using blisters, I have seen the most beneficial effects result, nor have I used

any remedy with more satisfaction and success in removing dangerous symptoms.—I do not remember a case, where blisters failed in removing this most dangerous irritability of the stomach, where they were early employed and persisted in. I have also seen blisters singularly useful in the latter stages of the Remittent, when the spirits flagged, when there was a disposition to coma, and the pulse was low and fluttering, with that insensibility so often present with such symptoms. In these cases I have successfully applied blisters to the neck and shoulders, to the ancles and inside of the thighs, they were not large but made very strong so as to act; and I have seen cases where I could attribute recovery to them alone. One medicine I must mention, which I have used with good effect after the irritability of the stomach had somewhat abated; it was a solution of white vitriol in peppermint water, with the addition of a few drops of laudanum; I used the proportion of two scruples of the vitriol to six ounces of water and thirty drops of laudanum. Of this mixture I prescribed a table-spoonful every half-hour, till the symptoms disappeared. Dr. JACKSON used at times portions of burnt alum with good effect. These must act by their astringent power, which is applied in a small bulk
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without distending the stomach. The vessels in the inner coats, previously surcharged and dilated, are thus contracted and strengthened, the distention which made them so irritable is diminished, and they acquire some portion of their former tone and feeling. It is in this manner only, I can account for the good effects of astringents in this state of the stomach.

In the progress of the Remittent, especially when remarkable debility occurred, I still persisted in the use of the cold water, and generally found that the strength was repaired, the pulse rendered more equable, and the recollection more distinct and more decisive. During the recurrence of this debility, I used camphor joined with nitre, and sometimes James's powder, as I judge with good effect, in opening the skin; and where there was any tendency to subsultus, opium was added in considerable doses. If in spite of these means the pulse still continued to sink, and the vital energies to diminish, I had recourse to the warmest stimulants, such as æther, brandy, cayenne pepper, brandy baths, &c. It is then, of importance to maintain and support the living phenomena, to rouse the dying arteries, and to diffuse stimulus, from the grand

centre the stomach. However theory may criticise such practice, experience will justify it, as sometimes successful, and success is the best comment on any mode of treatment. When remissions were obtained, and the disease showed a disposition to yield, the infusion of the bark and vitriolic acid were prescribed, and continued during the tedious stage of convalescence, when the patient was apt to fall into a number of diseases, arising from the previous derangement and debility of the system.

It was in this general manner then I conducted the treatment of the Yellow Fever as it has been termed ; varying my means, in many particulars as occasion required. I might have perhaps furnished a number of cases in detail ; but my constant occupation did not permit me to take down these medical histories at full length. I noted the general outlines, and progress, the remarkable occurrences, the general effects of various treatment ; but this was all I could do. Occupied from morning to night in the hospital, or visiting sick officers, dispersed over a large town, it was impossible to be very minute. Before I proceed to discuss the views on which I esta-

I established my practice, I shall mention one caution in the use of blisters which may prevent much inconvenience to the patient; I mean the guarding the seat of them with the utmost vigilance from the flies. The moment the skin is removed, they croud upon it, and deposit their eggs, which become in this nest a race of maggots, and often form dangerous and deep ulcers, pouring out myriads of these disgusting animals. The patient often feels excruciating pain from their motion, and their efforts to feed on the animal fibre. They cannot be banished without much torture. They form sinuses, into which they retire, and elude the forceps or probe. They resist mercury, spirits, and the strong solution of corrosive sublimate, in all which I have tried the duration of their lives, which in these elements they supported for hours. The successful and decisive remedy is the oil of turpentine, which never fails to kill and banish them, when it has proper access to their habitations. This remedy was first recommended to me by my friend Dr. WRIGHT of St. Domingo. It frequently gives intense pain, and almost throws the patient into fits; so that care ought to be employed in the beginning to prevent the flies from alighting on the sore.

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I shall now state the grounds on which my practice was founded.—In the first place I adopted no one particular remedy to which in all cases I invariably applied, without the assistance of others. It is evident, that as circumstances of disease vary in almost every individual, so must our means be varied also, if we wish to meet the disease and fairly combat it. On this principle the supporters of blood-letting, and the prescribers of calomel are equally wrong. No invariable mode of treatment can be adopted with success in any one disease. I accordingly adopted and blended all the systems of management which have been offered in the Remittent. I was certainly more successful, after I adopted blood-letting than before, and in many cases among the officers; where I was called early, had no reason to be dissatisfied with my labour. In the General Hospital, I could not by any means boast the same success; the cases which came under our inspection there, were of the worst description in themselves, and we seldom saw them in the early stage. The surgeons of regiments seldom ordered their patients to the General Hospital, until the case became very dangerous; in such circumstances many recoveries could not be expected, and accordingly the mortality was very great.

great.—But to return ; I before stated, in the beginning of this work, that the first effects of the causes of the Remittent, were to form determinations of blood to various parts of the body, but more especially the internal organs : That these determinations consisted in a larger portion of the blood being directed to particular vessels, distending and stretching them, producing an increased morbid sensibility, and all the symptoms of acute inflammation. That the cause of these phænomena, was a diminution of strength, in some parts of the vascular system, by which the balance of circulation was destroyed ; and that the danger of the disease, consisted chiefly in the strength of such determination, and the importance of the organ to which it was directed. That these determinations actually happen may be inferred from the phænomena of the disease itself. The irritability of the stomach, the astonishing impatience it manifests in rejecting solids or fluids, the convulsive agonies into which it is thrown, the pain to the touch, are strong proofs of this fact. But dissections prove beyond all contradiction, that effects very similar to those of inflammation, actually take place ; the inner coats of the stomach are often found separated

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from the rest, and floating loose with the secretions of that organ. The astonishing quantity of a ropy clear fluid often thrown up, when the patient has had no drink, proves clearly an increased secretion in the stomach, which could not happen, without an increased action in the vessels, and a larger quantity of blood than the usual proportion to that organ. That determination happens to the head, is indirectly proved, by the coma often present ; by the flushing in the face, and the visible action of the arteries about the neck and temples ; and directly by dissection, which shows actual derangement, and marks of fulness in the vessels. But what is more to the point, in cases, where the indirect proofs have occurred ; great suffusions of a clear fluid have been found in the brain. This clearly argues an increased action of these vessels, and an unusual fulness in consequence. I know, it is difficult to draw precise and just conclusions from the state of the brain after death ; because in the struggles of dying, and the peculiar circumstances of respiration, during these agonies, almost every one dies in a state of apoplexy.— And hence, the vessels of the brain appear over-distended on dissection, though this distention might not exist till a few minutes before death ;

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but where the symptoms already stated have appeared in the head, and where intense pain has been present; and dissection afterwards confirms, I think the conclusion may be fairly made, that there was a determination to the vessels of the brain. The liver too is very frequently attacked by determination. In almost every dissection, that I have either seen or heard of; the liver has been found somewhat enlarged and tumid, and the gall bladder commonly distended and full. In one instance which occurred, when I was at Cape Nicholas Mole, in a person under the care of my friend Dr. FELLOWS; the liver contained an amazing imposthume full of pus. It had hollowed out, nearly half the hepatic substance; and the rest of it was uncommonly large, and tumid. I had seen this man a few days before he died, he complained of some pain in that hypochondrium, and I suspected that the liver was affected. Dr. FELLOWS, with a laudable industry opened and examined him; dissection in a warm climate, is not the most agreeable manner of inquiry. It appears then, from unquestionable facts that determinations really happen, and that the greatest danger arises from them. The danger of determination, would seem intimately connected with a certain

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tain tone of the vessels, or what has been called an inflammatory diathesis, and this again to depend on the absolute quantity and momentum of the circulating mass. If this view be correct, and it is the only one in which circumstances lead me, to see the disease, the propriety of an early and liberal blood-letting is at once established.

These are decided modes in which the proximate cause operates, and blood-letting appears to me the best and most likely means to avert danger; but when the bias towards determination is completely formed, it is then matter of great difficulty, to prevent its going on. When the morbid action is once begun in consequence of determination, it is not easy by any means to restrain it; but to diminish the bulk, and consequently the momentum of the circulating mass, is the best means we can employ to prevent its fatal consequences. The vessels must act vigorously and be in a state of distention to produce the effects we observe in the stomach itself; the inner coats cannot be separated without considerable violence, nor the organization of the vessels and coats could not undergo such complete derangement, without

without great morbid action. But blood-letting diminishes distension, tone, and vigour in the vessels; and therefore seems best calculated to prevent danger. And it is of the utmost importance, that the morbid action in the stomach, head, or liver, should not at all commence; as then, our blood-letting and other means may be too late. The effect of a stimulus, or rather the action it produces, may, and does in certain circumstances, continue, after the stimulus itself is removed. Hence it is of importance, to prevent the commencement of morbid action.

A fact occurs, in the administration of purgatives, which illustrates this reasoning; it often happens in the exhibition of salts, that they are instantly, rejected from the stomach; but the purgative effects are produced notwithstanding. That is; the stimulus imparted by the salts to the fibres of the stomach, had begun a certain action there, which had gone forward and continued after the salts themselves had been thrown up. It is the same in determinations, if once they have been formed, and that a peculiar action has been produced in the vessels; though the momentum and bulk, of the circulating mass, may be afterwards

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diminished, and the danger of the determination perhaps lessened, yet some of its peculiar effects will go forward; and be at times hazardous. So that prevention, would seem a more secure ground of practice; and blood-letting appears to me, to be the chief and best means of effecting it. I trust it has appeared from the above reasoning, that it is essential to perform blood-letting very early; and as liberally as the circumstances of the patient will admit. It will appear also, that if the action of the vessels is not diminished, after the first blood-letting, that it will be necessary to repeat it; till that effect is really produced. Much of the future events of the disease must depend on an early blood-letting.— It is to be observed, that this doctrine, more especially applies to the case of strangers, newly arrived; and possessing like the English, the full, irritable, plethoric habit, on which the Remittent establishes its conquests. It is in such habits, that determinations, are apt to be produced. But they may occur in people, who have resided for a long time in the climate, whose vigour and strength have been diminished by perspiration, and the relaxation, heat always induces. In these cases,

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blood-letting cannot be employed with the same freedom.

I omitted in my plan of treatment to mention Friction on the skin.—Whenever we are able to induce action in the vessels, the supply of blood to them is increased, or a determination to that particular set of vessels takes place. In this view Friction was recommended, which by having a chance of exciting into action the vessels of the skin, would divert the force of the circulation to the surface of the body. For it has been observed, that the determinations are apt to happen towards the internal organs. Friction therefore may divert the circulation to the surface, the spasm, which commonly takes place, may be thus removed, and the determinations to important organs prevented. The James's powder was prescribed also in this view, as I have often seen it operate on the skin; whilst the calomel cleared the bowels and removed fæculent matter, which might prove highly prejudicial to the system.

Both the calomel and James's powders are powerful alteratives, and may conduce to change the given state of the body; though

I am not clear, that smaller doses of calomel, would not succeed better, than large ones, as these become purgative. And purgatives certainly must in some degree favour determinations. The action of the vessels in the intestines once excited, solicits a greater flow of blood towards them; and purgatives operate by producing this action. Whether they compensate for this by removing, what would prove highly stimulant and dangerous, in the intestines, may be doubtful, as frequent injections might effect this end. Purgatives appear to me a dubious remedy; they certainly irritate, although they produce evacuation, yet in this way, they may contribute to diminish the bulk and momentum of the circulating mass. In Dr. RUSH's practice considerable stress is laid on their carrying the calomel briskly through, and he seems to think that it contributed to the good effects of it, to be thus hurried through the intestines. To his authority, I pay great deference; but I cannot clearly conceive how this method could contribute to the good effects of calomel. I have already, pretty freely expressed my opinion of its use, as an alterative.

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I come now to speak of the warm and cold bath, which I so freely employed; and here I must recur shortly to the doctrine of proximate causes, and our general knowledge of fever. It has been already said, that we do not know, precisely and definitely, the nature of proximate causes, and therefore, that practice by indication; is often mere amusement, a fiction, by which we deceive ourselves and our patient. Our knowledge of fever, in its intimate and necessary mode of existing; is not much more extensive.—Theories have risen after theories, and again sunk into oblivion; they are perused by the curious, as monuments of the difficulty of the subject; and the defect of knowledge. In these circumstances, the physician, untutored by any rational instructor, must search out principles for himself; and try some new path, by which he may prove more successful in his researches. On these grounds, as I could not prescribe by definite indication, in the Remittent, when the various means already enumerated, failed of success; I attempted to change at once the whole given, or existing circumstances of the system; so as to change the morbid phenomena; and by thus introducing a new order of things,

have a better chance of curing the disease. It is evident if the whole state of the body, undergoes a revolution; that the morbid cause, cannot in a new condition of the body, produce the same phænomena as before. But it may be asked, whether I can ascertain, that the new order of circumstances will be less dangerous, than the former which have been banished by my practice? To this I reply, that no new circumstances or change, can be more dangerous, than the state, we attempt to alter; and that the revolution in the system affords some chance, and therefore, that there is a preference due to it.— In cases, where few escape, and where certain symptoms form presages of death; it is surely the duty of the physician to vary his means, and not obstinately persist in any one method, which has not been successful. Instead of adhering to blood-letting or calomel, to bark, injections, diluents, or any one method, I took advantage of them all, and combined or separated them, as occasion might require. From an attentive view of the disease and its symptoms, I drew some general conclusions, which had an influence on my practice; but I was often placed in a situation, to abandon these conclusions, and attempt

tempt innovation. As the most powerful means of effecting a change in the given circumstances, I used the cold bath. And I premised the warm, in order to create a high degree of sensibility, because, without sensibility, we have no basis to act on; nor can any change be actually produced. I had the satisfaction to see many cases, in which I had reason to congratulate myself on adopting and pursuing these opinions, and if even our success is confined to a few instances, there will be good grounds still, for innovation.

I have now pretty fully explained my view of the disease, and the grounds of my practice; and I am not without hope, if it ever is my lot to be again placed, where it rages, that I should be more successful, than heretofore. It requires a long experience to form accurate conclusions. I have now only to observe, that, I confined the use of the bark to the convalescent period, when it seemed to prevent accessions, and to increase the strength and appetite. A long train of diseases often followed the Remittent, all intimately blended with debility. Obstinate incurable diarrhœas frequently appeared, which resisted any thing I could ever

try. Malignant eruptions, ending often in foul ulcers, were sometimes the consequence of the fever; œdematous swellings, loss of appetite, great languor and debility, often remained for a long time, in spite of every remedy. It was always my opinion, that strength could not be recruited, in situations, productive of miasmata; and therefore, I uniformly recommended, as soon as the patient could bear it, a change of situation and climate. The state of our garrisons, did not sometimes admit of the absence of officers, who ought to have had the benefits of a change.—Many languished away life, in this unfortunate imprisonment.

It has been remarked, by many practitioners, that ulcers in the West Indies are much more obstinate than in Europe; and I believe there has been ground for the observation. But I must confess, that I have been surprised, by the success I have seen, both in wounds and ulcers at St. Domingo. Operations have been performed with more than European success, by Messrs. WARREN, MONTAGUE, and BUCKLE; and I have seen ulcers of the most malignant aspect cured, under the direction of the same gentlemen.

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Having now finished, what I had to say, on the Remittent, and its treatment, I shall offer a few words more, on the class to which I have referred it. Dr. JACKSON, with whom it is not safe to differ, and for whose authority I have the greatest respect, considers the Yellow Fever as a distinct disease, entirely different, from the Endemic Remittent; and for this opinion he offers the following reasons: “ In our enquiries into the history of the Yellow Fever (says Dr. JACKSON) some circumstances present themselves to our observation, which are not a little curious. It has never been observed, that a negroe, immediately from the coast of Africa, has been attacked with this disease; neither have Creoles, who have lived constantly in their native country, ever been known to suffer from it; yet Creoles or Africans, who have travelled to Europe, or the higher latitudes of America, are not by any means exempted from it; when they return to the islands of the West Indies. Europeans, males particularly, suffer from it, soon after their arrival in tropical climates; yet after the natives of Europe, have remained for a year or two in those hot climates, especially after they have experienced the ordinary endemic

demic of the country ; the appearance of the Yellow Fever, is observed to be only a rare occurrence ; but besides, that this disease seldom discovers itself, among those people, who have lived any length of time in a tropical country ; it has likewise scarcely ever been known to attack the same person twice, unless accidentally after his return from a colder region. The Remitting Fever on the contrary, does not cease to attack such as have resided, the greatest part of their life, in those climates, or who have lived, after the most regular and abstemious manner ; a fact, which seems to prove, that there actually exists some essential difference, between the two diseases, or which shows at least that the revolution of a season or two destroys in the European constitution, a certain aptitude or disposition for the one disease, which it still retains for the other."—The above facts, which are strictly true, do not by any means, weaken my conclusions, or constitute any real difference in the disease ; on the contrary, they seem to strengthen my doctrine. Africans and Creoles, live chiefly on vegetables ; they do not possess that constitution or habit on which I allege the Remittent establishes its conquests. They have not the inflam-

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matory plethoric fulness on which the severity and accession of the fever seem to depend; but when they travel to Europe, or the higher latitudes of America, they do acquire this constitution, by a change in the manner of their living; by doing what Europeans and Americans do; in short, by living in the same manner. They are then, on their return from Europe, liable to the fever; and sometimes to its worst form. But still the disease is less violent in general, among the Negroes and Creoles, than among Europeans or Americans. Because in their habits, the inflammatory diathesis, does not exist in the same degree. After the natives of Europe have remained, as Dr. JACKSON states, one or two years, in those hot climates; especially after undergoing the usual endemic; the Yellow Fever is observed to be a rare occurrence. That is, after the constitution, by a residence of one or two years, and by undergoing a mild disease, loses the inflammatory disposition; then, any succeeding attack does not proceed so far, as to induce the yellowness, which I have noted, as marking a dangerous gradation, and the worst stage of the Remittent. All the security,
which

which people derive from a long residence in a tropical country, arises from the gradual diminution of the inflammatory habit, which chiefly seems to produce the worst stages and symptoms of the Remittent. The fever, for the same reasons, seldom returns twice; but this is only a very general observation, for wherever the plethoric state is produced in those, who have resided for years in these countries; the fever is apt to return with fatal violence. Of this I have seen many instances. Captain I.—, of the 82d regiment, died of the second attack at the distance of twelve months from the first, from which he had happily recovered. Captain R.— died after he had resided twenty months at St. Domingo. Residence only improves the chance of existence by diminishing the inflammatory diathesis. “The Remitting fever on the contrary, (says Dr. JACKSON) does not cease to attack those who have resided for years in the climate, and lived in the most abstemious manner; and hence, there must be a difference between the Endemic and Yellow Fever.” Now all this reasoning amounts simply to this, that though the Remittent attacks those, who may have resided for

for some time in a tropical country; yet it does not commonly proceed to that violent ultimate stage of danger, the yellowness. Because the inflammatory diathesis has been destroyed by the relaxing powers of heat, and perspiration. But they are not wholly exempted, they are only subjected to a milder form of disease, from the antecedent circumstances, of the constitution. Dr. JACKSON has stated the facts with his usual correctness; but we differ in our conclusions; to his candour, I most willingly submit my inferences.

With respect to the variety of forms into which the Remittent is divided, I cannot do better than use the words of Dr. JACKSON. He has described in the following quotation all I have ever seen, viz. “ A species of
 “ disease, in which signs of putrefaction, are
 “ evident at a very early stage; which is ge-
 “ nerally rapid in its course, and which usu-
 “ ally terminates in black vomiting. Yel-
 “ lowness seldom or never fails to make its
 “ appearance, in the present instance; and
 “ perhaps it is only this form, which strictly
 “ speaking can be called the Yellow Fever.

“ Secondly, into a form which either has no
 “ remissions, or remissions which are scarcely
 “ perceptible; in which signs of nervous af-
 “ fections are more obvious, than symptoms of
 “ putrescency, and in which yellowness and
 “ black vomiting are rare occurrences. Into
 “ another form in which regular paroxysms
 “ and remissions cannot be traced; but in
 “ which there are marks of violent irritation,
 “ and appearances, of inflammatory diathesis
 “ in the earlier stage, which give way after
 “ a short continuance to signs of debi-
 “ lity and putrescency; which yellowness
 “ frequently succeeds, or even sometimes the
 “ so much dreaded vomiting of matter of a
 “ dark colour. The disease which I have
 “ divided in the above manner, in three dis-
 “ tinct forms, appears to be in reality one
 “ and the same. The difference of the symp-
 “ toms probably arises, from very trivial or
 “ very accidental causes; it is a matter of
 “ great difficulty to discriminate those signs,
 “ which are essential and necessary to its exist-
 “ ence. It is in some degree peculiar to
 “ strangers from colder regions, soon after
 “ their arrival in the West Indies, and may
 “ generally be distinguished from the remit-
 “ ting

“ ting endemic of the county, not only by the
 “ obscureness, or total want of paroxysms and
 “ remissions, but likewise by a certain expres-
 “ sion of the eye and countenance, with some-
 “ thing unusually disagreeable, in the feelings
 “ of which words convey only an imperfect
 “ idea.”

CHAPTER III.

SECT. I.

REMITTENT OF ST. DOMINGO.

*Means of Prevention—Changes in the System
from Heat—Preparative Course for a Hot
Climate.*

HAVING finished, all I had to say, on the Remittent of St. Domingo, I proceed to a very important subject, the means of prevention. This will necessarily include some preparation for the climate, previous to landing; with the most likely means of avoiding disease, after the troops disembark; to which some Observations will be added on Diet, Situation, and Exercise.

Numerous directions have already been given in various books for the conduct of
troops

troops on board ship ; the best and most concise, that I have met with are contained in a pamphlet written by Mr. STUART, surgeon in the East India Company's service, and addressed to the Court of Directors. I shall not therefore enter into any minute details on this subject ; but observe, that if my remark be correct, that the inflammatory diathesis, in any constitution, creates danger, our preparation at sea, must be directed to diminish this tendency. The great benefits of cleanliness, good air, and dryness, are known to every one who has passed any time on board ship. The effects of passing from a cold climate into a warm one, are sometimes very suddenly felt. Head-ach, nausea, an increase in the celerity and strength of the pulse, a discharge of bilious matter ; argue some derangement in the state of the solids and fluids. The general effects of heat are produced in the human body. The solids and fluids suffer expansion, but not apparently in the same proportion ; the fluids seem to be expanded before the rigid fibres of the solids sufficiently yield ; this may be inferred from the hæmorrhage, which often happens from the nose, from the feverishness and tension of the pulse, from the scanty perspiration, which occurs on our entry

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into warm climates. These would seem to argue, that the fluids suffering a sudden expansion, burst the barrier of the blood-vessels, before they had time to accommodate themselves, to the new bulk of their contents. Heat too, renders all the vessels more irritable, and appears to communicate a stimulus to the whole system. Hence the secretions in general are increased, except such as mutually supply the place of each other; as the perspiration, and discharge of urine are known to do. Perspiration relieves the system in two ways, first by diminishing the absolute bulk of the mass of fluids, and thus accommodating them to the solids; and secondly, by conducting off the excess of positive heat, in the process of evaporation. These objects are of the utmost consequence in the animal œconomy. Our great aim then must be to put the body in a condition, on our approach to a warm climate, not to suffer from the unavoidable expansion and change that must go forward. This is to be effected by diminishing the fluids, and lessening the irritability of the system. On our getting into the warm latitudes, before the heat becomes intense; we must begin our preventive means. All those who are vigorous, plethoric, or irritable in their constitu-

tions, ought to be bled, in proportion to their strength; it is impossible to lay down precise rules. For this purpose, the transports, or ships of war, ought to lay to; that the motion of the ship might not create present or future inconvenience to those who are bled. After this general blood-letting, a dose of salts ought to be administered to all those, in whom the operation was performed. They should be afterwards, every other day made to plunge in the salt water, for which purpose, large tubs might be placed on the fore-castle. This would cleanse the skin, and preserve the proper tone of the vessels from undergoing too sudden a relaxation. The troops at the same time ought to be put on a lower diet. The quantity of salt provision must be lessened, and if they have been hitherto, accustomed to ardent spirits, they ought now to leave them entirely off; and to substitute the less pernicious beverage of spruce beer, porter, or wine and water. But these drinks ought to be of the first quality, and approved of, by a mixed board of military and medical officers. Unfortunately the liberal supplies of government to the army, fall too frequently a prey to commissaries and contractors; whilst the officers and soldiers, are robbed of their just al-

lowances. Those who can live on a more liberal scale, and can command vegetables and fresh animal food, ought to diminish the quantity of the latter, as well as their former quantity of wine. For though the waste by perspiration requires, that the circulating mass be recruited, yet it is not necessary, that the whole of this supply should be in wine. The great basis of all our drinks should be water, blended with such portions of other nourishing fluids, as will not permit it to weaken too much, which perhaps it might do, were it not for this addition.

Before the troops are landed the same means already recommended ought again to be repeated; so that the inflammatory diathesis would in a great measure be subdued. Ardent spirits though they create a temporary strength and excitement, yet dissipate the strength more than any other means. The languor and debility of a debauch last much longer than the joyous moments which produced them. In this manner by frequent repetitions, the animal powers are destroyed beyond recovery; and many men, formed to delight society, become humiliating monuments of debauchery. The stimuli of ardent spirits,

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wine,

wine, and animal food, exhaust the system more than any others, and waste its excitability more completely. Men capable of great exertions have almost always, been sober abstemious men. Walking STEWART, seldom tasted animal food, or indulged in wine, yet he walked over an astonishing extent of country, without hurting his constitution; and with more perseverance than is commonly found. Dr. JACKSON, who follows the same plan, and has always led an abstemious life, gives, in his own person, remarkable proofs of vigour, under this regimen; and though now past forty years of age, is more active, and more capable of undergoing fatigue, than most of our young men of twenty. At Port-au-Prince he seldom mounted a horse, and yet he visited every barrack, every regimental hospital, and every ward in the general hospital, sometimes twice a day. And he did not seem fatigued in the evening. Independent of these direct instances of the benefits of a moderate abstemious life, we remark that the natives of warm climates in general, unless corrupted by Europeans, adopt this plan of abstinence. Among most of the Eastern nations, this sobriety of life is enforced by the principles of their religion. Their wise

legislators, ensured their obedience by sacred ties; by which they performed duties essential to their existence and happiness; with more pleasure and security. The Mahometans, though they do not absolutely decline the pleasures of wine, reserve the full enjoyment of it to their celestial mansions. The Gentoos, find a sufficient reward on earth, and practise moderation without a bribe. Temperance, like other virtues, is its own reward. But whilst I recommend temperance and moderation, I do not mean to insinuate, that we should wholly abstain from wine or animal food; on this subject I shall be more explicit in its place. It requires prudence and care to relinquish habits to which we have been long enured. It must be done by slow and cautious degrees, or we run a great risque in the attempt to improve. It would be rash to reduce a man, accustomed to drink a bottle of wine after dinner, to two glasses; such a reduction might be really dangerous. Nature, and the example of the natives of warm climates, would seem to point out, that the same diet which is necessary in cold countries, is not suitable to tropical climates.

Nature exhibits, in the tropical climate, the human system, relaxed and debilitated, and without the same powers and vigour which mark the robust inhabitant of Europe. The example of the natives, founded on this difference, teaches a mode of living proportioned to the vigour of their animal powers. Making this the rule of our diet, it would be certainly proper to alter our manner of living, on getting into the warmer latitudes. If it be the effect of heat to expand and relax, and by such change to debilitate the animal fibre; it must affect every part of the system, and diminish the vigour of every organ, which composes the living body. Among the other organs, the stomach must feel this general influence; and in fact we find its powers diminished; the appetite for animal food is languid, and when the stomach happens to be full of any thing that requires energy to subdue it, there is a remarkable oppression induced; and other symptoms of dyspepsia. The nature of the food must be proportioned to the vigour of the stomach. If this is a true axiom, we must conclude, that as the stomach becomes weakened and relaxed, in common with other organs of the body; we ought to supply it only with such nourish-

ment, as it can readily manage and subdue. Animal food in any large proportion, requires considerable vigour in the stomach to digest and subdue it. The proportion of it which enters diet in Europe, should therefore be diminished in a tropical climate; and a preference given to vegetables. Light soups seem to me well calculated for the powers the stomach retains; they do not require any great vigour to subdue them, and appear with little change to be fit for immediate assimilation. The French have adopted this mode of living, and are more healthy than we are. They are remarkable for their light soups and wines, and the large portions of bread, and vegetables, which compose their diet; all their plans and methods of life are directly calculated to diminish the inflammatory constitution on which the Remittent makes its most dangerous attack. But, independent of the ease with which digestion is performed, and the proportion established by this method, between the powers of the stomach and the resistance of the food; it possesses another great advantage; that it gradually lowers the habit to a secure and less hazardous standard. For should the Remittent make its attack, it finds the habit in a situation to make a proper resistance.

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These remarks apply to the West Indies in general, but more especially where Remittents prevail.

It belongs to this section to remark, that much depends on the period of arrival in the West Indies; but this is difficult to arrange, with any certainty, the attempt may be made, but the elements controul our arrangements. When however Government can attend to a certain season, the troops for West India service should be embarked in September. They will then, in all probability arrive in November when the healthy period commences, and they have before them four months of a milder temperature, during which they can be seasoned without danger. This is the only part of the year for activity or exertion; it is the only time in which European soldiers can be useful. They may be exercised with safety and trained to fatigue. It would therefore in every view be a desirable period for embarking West India troops. This attempt was made in 1795 from this country, but the event proved highly disastrous and dangerous. However such a boisterous season is not a common occurrence, and we may still hope for better success.

S E C T. II.

*Method of treating Troops after landing—
 Situations to be chosen for their Residence—
 Manner of Exercise recommended—Different
 Posts examined.*

HAVING made these general remarks on Diet, which, so far as the rules can be complied with, are applicable at sea; I shall now suppose the troops disembarked. The remarks which will be offered on this subject, will apply in general to the West Indies; I shall afterwards point out more particularly, what applies to the island of St. Domingo.

When troops are landed, the first object of the officers attention, should be to secure for them dry and comfortable quarters; and to prevent as much as possible, with extraordinary strictness, their having intercourse with the troops already in garrison. The effects of this intercourse are, commonly, riot, intemperance, and drunkenness. Instead of allowing them to run about the streets, and fatigue themselves with novelty; they ought to be restrained from any unnecessary exercise, with
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the most vigilant caution. The most positive and strict orders on this head, must be issued, and enforced. During this period of confinement, which ought to last two or three days, they should all have a dose of cooling physic, such as salts and manna; soluble tartar and jalap; with a variety of other preparations suitable to the purpose. They ought to be fed on soups, with very little animal food. All ardent spirits to be absolutely forbidden. After undergoing this preparatory regimen, they may be taken out to exercise in the morning, with some safety. The troops then, on the following day ought to be marched, to a known healthy situation, well sheltered from unfriendly winds, lofty, and dry. This removal never should be neglected; for it is proved, by accurate observation, that the miasmata, which produce the Remittent, generally require ten or fifteen days to produce their effect; or more accurately speaking require an exposure to them, of that duration, before the body is saturated and yields to their influence. This points out an absolute necessity for changing the situation of the troops, as soon as possible, after landing, and refreshing themselves. For all the places or towns in the West Indies, where troops are
commonly

commonly landed, have been built for the purposes of commerce, with very little consideration of their healthfulness. They are in general on low grounds, and these grounds being situated at the foot of high mountains, are somewhat marshy, and therefore not fit situations for troops. To this Port Royal in Jamaica forms an exception, being a sandy dry soil, and reckoned in that island very healthy; though not in the same degree as Stoney Hill barracks, an elevated, well sheltered, and dry situation.

When the troops are thus removed, it is probable, that they will not suffer, in any great degree, from the Endemic of the country. For allowing, that the miasmata act upon them, the moment they land, it is not improbable, as they require a certain length of exposure, to produce their effect, that the troops may escape after three days delay. But granting that a certain portion of them is admitted; the change into another climate, with a purer air, may prevent the ill effects which might otherwise result. The miasmata do not seem to operate like the small-pox; and from the smallest conceivable particle, produce their effects, as decidedly, as if
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a great quantity was employed. For the violence of Remittents, which we suppose, arise from miasmata; seems to depend, on the quantity of them, applied to the body, where the attack takes place. Thus, at Port-au-Prince, where, there are large marshes, the fever attacks strangers much sooner, and proceeds with more violence, than at Jeremie; where there is not the same nursery for miasmata as at Port-au-Prince. And at Bizoton, which rises from the middle of a marsh, the Remittent attacks after a shorter residence, than at Port-au-Prince; because, there are larger portions of miasmata produced and applied to the system. It is therefore probable that a certain quantity of miasmata is necessary to produce the Remittent, and a certain length of exposure requisite to saturate the body. These are sufficient reasons, for removing new-landed troops, to well known healthy situations. When they are removed; their diet should be as much as possible made up with wholesome vegetables; and great care taken, that no excess be committed with fruits and acids, which bring on troublesome diarrhœa and dangerous cholic. Spirits ought not to be allowed; but spruce beer, or what is perhaps preferable, good porter may be
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given without hazard. Each soldier might consume three pints a day; with advantage. If spirits are ever granted, water should be added, to dilute them; perhaps half a wine glass of good brandy undiluted, might be allowed after dinner. Soldiers cannot believe their existence secure without ardent spirits. And the officer may find it necessary sometimes to concede something even to their caprice.

I now suppose the troops in healthy, well situated cantonments, where they are to be trained for the service of a hot climate, with all the security against the invasion of the Remittent, that they can well possess. If they are in the neighbourhood of running water, or any convenient situation for bathing, I would strongly recommend the cold bath, every morning, or every other morning. Unless the surgeon of the corps, points out unfit subjects for this healthy exercise, they should be all ordered to bathe. An officer and the surgeon ought to superintend this operation, that no riot or play may take place, which might keep them too long naked, or in the water. When they have plunged and washed themselves, they are to be rubbed dry with a coarse towel, with which each of them
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ought to be furnished; and then retire to their barracks with a brisk pace. They will feel themselves light, invigorated, and cheerful. They resist in this manner, the relaxing effects of heat, they acquire strength without the inflammatory habit, and they become fit for service, without fearing disease.—

This, as THOMPSON has expressed it, is the purest exercise of health; the kind refresher of the summer heats. And the same poet adds, ‘that the Roman arms, which subdued the world, first learned to subdue the wave.’

At the mess of soldiers an officer ought always to be present, to regulate their conduct, and see, that no impropriety is committed. This is particularly necessary in the West Indies, where all the caution and vigilance employed is hardly sufficient, to prevent the men from getting a poisonous kind of rum, which destroys numbers. I saw at St. Domingo a striking example of the benefit of this attention, in the royal, or first regiment. Colonel Green, with the most laudable and indefatigable zeal, was never absent from the mess of his soldiers; he regulated, ordered, and conducted every thing. The effects of this management were astonishing; the royal were the most orderly, the neatest, and best looking

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men in the garrison; their deportment and appearance distinguished them at a distance; and other regiments looked up to them as objects of imitation. This sort of attention in officers, greatly improves the military ardour of soldiers, they feel their own importance, they are sensible of the kindness shewn them by their superiors; and they will not disgrace their friendship. At all events this vigilance must prevent riot and drinking, or the smuggling of rum into the mess; for which the most ingenious stratagems are contrived.

After regulating situation and diet, the next thing of importance, is military exercise; which is to complete the soldier for the purposes of his profession. It has been a general practice among officers, and from the best motives, to prevent the men as much as possible, from running about in the sun, or being even exposed to it for any time. This restriction is certainly very proper for the first few days after their arrival, but no longer. The soldiers who arrive in the West Indies are destined to serve in a hot country. They must, as service may require it, be exposed to the action of the sun for many hours; and often for a whole day;

day ; is it not absurd then, not to initiate these men into a gradual tolerance of what at some period they must undergo ? It is not from a dark chamber, we would bring a person, to fit him, to bear the splendour of light, without hurting his eye. Nor would we train, in a heated apartment, a soldier for the cold region of Nova Zembla. Equally improper, is the method of chasing troops to their barracks, whenever they appear in the sun. The consequence is, that troops thus educated ; in the cool shade of their barracks, are rendered unfit for any service ; in this retreat they languish and sleep their time away, they acquire indolent habits, they become relaxed ; and for want of better amusement get drunk. When the service requires them to quit the shade, and march into the field ; they are incapable of fatigue, the first beam of the sun injures them ; like tender plants they shrink from the breeze, sicken and die. Nor is this surprising ; it is to them, a sudden change, they plunge at once into severe exertion ; without being gradually inured or trained to it ; and they suffer accordingly. It is astonishing that this prejudice should prevail, and be even encouraged by medical men, as I have frequently seen. If indeed soldiers could fight,

with umbrellas over them, or command an eclipse, whilst they were in the field; the present method of training them, would be proper and useful. But as effeminacy has not yet corrupted, or miracles assisted our armies, we must recur to methods founded in common sense, and common reason. What is it, that gives the superiority to black troops over ours in a warm climate? Is it not the capability of enduring the heat of the sun without danger?—and ought it not to be our aim gradually to bring our own troops to their level? Nothing will do this but education; a gradual habit, which at last steels the constitution, and fits it for any exigency. I have seen at Port-au-Prince, many men drop down on short excursions, affected by the heat. If they had been gradually inured, this would not happen. I brought myself to bear the sun's utmost heat without any disagreeable sensation. My profession required, that I should be able to go out at every time of the day in which I might be called on; I never used an umbrella, and I rode all day, wherever my assistance was required without any inconvenience. But I acquired this habit gradually. Dr. JACKSON acquired the same habits, and walked daily in the sun, without suffering

suffering any injury.—With respect to troops, it is necessary to form this habit of enduring the sun very gradually. Let them begin to exercise at five o'clock in the morning; and continue this practice for two or three days, then come on, to half after five, to six, seven, or eight o'clock, prolonging their stay in the field each day; and making the hour progressive. After a habit of performing their exercise at eight o'clock, let them be gradually brought on to twelve in the forenoon, the warmest period of the day; and at first detained for short intervals, which may afterwards be increased to any time. Troops will thus become highly useful; and in time be equally fit with the natives of the country to undergo any fatigue or service. I appeal to common sense, on this question, to the experience of every one who has attentively viewed troops on any expedition in a warm climate. It must be evident, that it is proper to train them by degrees, to form and establish a habit of bearing heat, to which the nature of the service, must unavoidably expose them, some time or other.

When at Madrafs, in India, I had an opportunity of observing, that the troops in that

country were generally exercised, at an early hour in the morning without any variation; and that they were sent back to their barracks with a sedulous care, to guard them from the sun. I understood at the same time, from a number of officers; that on service, many of these troops suffered from the sun. Having had an opportunity of mentioning this subject to the late Sir ARCHIBALD CAMPBELL, then governor of that settlement; he was struck with some observations which arose in our conversation; and that excellent officer adopted the plan of progressive exercise, from an early to a more advanced hour of the day. At first, troops will not bear a long period in the heat of the sun, but by degrees, they may be so inured, as to undergo long marches, without any inconvenience. This is a subject of great importance; as a very different system is at present carried on in the West Indies; a system which unfits the soldier for exertion, and exposes him to new perils; against which we might easily guard, by a little attention.

I am so convinced, on the propriety of bringing up soldiers, to a gradual endurance of heat, that I am astonished, it should not have been long

since adopted; but prejudices do not easily give way; and the sun has from immemorial time been reckoned unfriendly to the European constitution. The restriction is highly proper at first. It is a curious fact, proved almost by every one, that those who arrive from England in a warm climate, or from the latter in England; endure the heat or cold better, for the first season, than during any subsequent one. This is a dangerous prepossession, in either case. It is difficult to explain, how the sensation arises. It would seem to me, to depend on this principle chiefly; that we conceive the heat of the East or West Indies, greatly beyond its real standard. And the inhabitants of warm regions imagine the climates of Europe, to be much colder than they really are. When people arrive under this impression in these climates, they do not find the heat or cold correspond with the degrees, imagination had fixed, and therefore they brave all caution, until the fervour of fancy has abated, when they feel the heat or cold as they really are.

After the troops have been stationed for a few weeks in healthy situations, they might be permitted for a few days at a time to do

duty in less salubrious places, and then, return again to their former stations. They would thus become gradually habituated, and at length resist the influence of the miasmata. The want of such situations at St. Domingo proved highly injurious to our troops. When the troops from Ireland arrived at the Mole, they were obliged to live for weeks on board the transports, where an infectious fever raged, and made great havoc amongst them. This would not have happened if they had been landed and encamped, on the neighbouring hills, or if there had been proper barracks to receive them; the consequence was, that numbers perished; and that little army, which originally consisted of five thousand men, was very shortly reduced to fifteen hundred. There were no places prepared for the sick, or their necessaries. Military and medical stores were landed in haste, and strewed the shores, like fragments of a wreck. The exertions of the medical gentlemen at this post were extraordinary. Mr. WEIR, the inspector-general of hospitals, took every possible means, of providing in the best manner for the sick. He took the duty of physician, and fatigued himself in every department that required his presence. Dr. JACKSON exerted his usual humanity;

humanity ; and Drs. MASTER, CLEGHORN, and FELLOWS, had their ample share of employment. Yet from not seeking a more healthy situation, the troops perished rapidly. In fact, they imported from Ireland an infectious fever, which, for a short period, raged, independent of the endemic of the island, and did great execution. In such circumstances, the exertions of medical men proved of no avail ; terror spread wide amongst us, and increased the conquests of death. Of such importance is it to chuse healthy situations.

It is now time to speak of the healthy posts at St. Domingo, which unfortunately are few in number, and therefore easily described. It may be the lot of British troops in the course of war, to land again, in this unfortunate island. If this misfortune should ever happen, let us take such precautions as the nature of the country, in its present situation, will admit.

The Mole, from its commodious harbour, is generally the place where troops are first brought ; but no delay ought to be made in this situation. Such troops as are really necessary for the defence of the post, must be landed, and after undergoing the preparatory

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regimen already mentioned, they are to encamp on the brows of the hills, beyond the town, in the manner which general WHYTE very judiciously adopted. They are there less exposed to danger, and form a cordon of defence round the garrison. It has been very clearly proved, that lofty situations are not by any means the most healthy in marshy countries; because they are more exposed to streams of miasmata, from the very circumstance of their elevation. We are therefore to chuse dry and well-sheltered situations, especially against the land winds. We are to take care, that no marshes of any extent are to windward of us; and that we have, if possible, streams of running water in our neighbourhood.

After landing at the Mole, what may be absolutely necessary for its defence—the rest of the troops, should proceed for Jeremie, a district of the *Grand Anse*; by far the most healthy situation in St. Domingo. It was to this place, that the convalescent French, used to fly as to Montpellier, for health; and generally succeeded. The inhabitants and troops of this quarter, wear an European aspect, when compared with the fallow complexion of their neighbours. The country is dry and lofty, streams
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of water rush down from the mountains, and the sea breeze, cools and refreshes the air. Here then is the situation, where we ought to land the bulk of our troops for the service of St. Domingo. After they have been in this healthy situation for some weeks, they may be sent to St. Marc's, or the Mole, and last of all to Port-au-Prince. But during their residence at Jeremie, they ought not to be confined to the town ; but be scattered over the most healthy plantations, which for this purpose, may be converted into useful barracks. To this the French proprietors cannot object, as they derive from the troops defence and security. The barracks at Jeremie were judiciously erected under Colonel MURRAY's inspection. If it becomes necessary to send troops, to that fatal spot, Port-au-Prince ; they ought not for any time to remain in town, which in fact is a nursery of miasmata. They ought to be encamped on the brows, of the mountains which surround that town, in a curve line from Tourgeot to Biffoton. This plan of incampment, was pointed out by Dr. JACKSON, who travelled over the ground ; but it was not adopted from some frivolous objection. It was alleged, that the inhabitants of the town, could not be trusted ; or that
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they would lose confidence and fly the town. This could not well have taken place, when Fort Royal, formed one point of the Semicircle and Bissoton the other, whilst the connecting line was a chain of posts—however, the plan was not adopted.

The greatest attention ought to be paid, that troops are not placed, in situations known to be unhealthy. The spirits sink, and the operation of fear renders the access of disease more easy and certain. To places remarkably unhealthy, as Port-au-Prince, the best seasoned troops ought to be sent; and placed in Fort Royal, which commands the town so very completely, that in case of commotion, its artillery might very soon reduce it to ashes. The duty in the town might be performed by our best colonial troops, under the command of honourable and well-tried officers, such as the baron Montalembert or Desource. The duty of Bissoton must fall to them also, being the most unhealthy of all our posts. The colonial troops would exist there, though it be certain death to ours. The British in this arrangement, are to occupy the brows and declivities of the mountains; dry and well sheltered posts. They form a grand outline, and defend the town, at least much more effectually,

effectually, than if they were included in its hospitals. They would be thus removed, from the great source of disease, the miasmata ; and they would occupy a country where they would find a purer atmosphere, more chearful prospects, and more healthy amusement.

The Croix de Bouquet is found tolerably healthy, by the French inhabitants, but it has proved fatal to the few British who resided there.

The plantations spread over the plain of the Cul de Sac, form the worst possible barracks, because the whole of that wonderful and fertile spot, is itself a marsh, where a constant exhalation is going forward ; and the accommodations for the officers and soldiers are of the worst description ; from the devastation of the unhappy negroes, who are willing to erase every monument of human industry, and every trace of their former labours. It is indeed melancholy, to ride among these wide-extended ruins. Every where, marks of opulence, elegance, and commerce, all now levelled with the ground, by many of the hands which assisted to rear and protect them.

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Our troops have also suffered very much at L'Arcahayé, which formerly was reckoned a very healthy situation. Whether it was, that LE POINT the French commandant, did not chuse any interference, from English officers, or that he really had no good situation for them or their troops; it is certain that all the officers sent to that quarter made complaints of their treatment. This post therefore should be chiefly occupied by colonials.

St. Marc's, formerly pretty healthy, has proved very fatal to our troops. Part of the ninety-sixth regiment landed there, and were soon exterminated to a man. But I believe an infectious jail fever, had raged amongst them; ere they left the transports, and carried off great numbers after they landed. On a view of St. Marc's, it would appear to be advantageously situated for health. It is sheltered on the land side from the pestilential land winds, by very lofty mountains; the soil on which the town is placed appears dry and sandy, the skirts of it are washed by the sea, which carries off many impurities, and the sea breeze, blows with little interruption. Yet after all, this place has been very unhealthy to the British troops. I think the opening of a ditch round
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the town, which exposed a great surface for exhalation has greatly contributed to this unhealthfulness. Indeed the inhabitants themselves made this remark, and seemed to date the commencement of sickness, and fever, from this period.

LEOGANE was also very unhealthy, when we had possession of it ; it is situated in a marshy plain. Nor were we much more fortunate in Mirebalais, where it was hoped we should have enjoyed much better health. When Dr. JACKSON visited this post, he strongly recommended, that the British troops should be moved from the ground they then occupied, to a more healthy position, and in fact an order was given to move them ; but the French commandant found means to evade it, and detained them ; till they all nearly perished. He was engaged in some lucrative contracts of supply ; and the British were good customers. The 82d regiment one of the finest, I ever saw, was stationed in this quarter, to which they were sent, as a refuge from the devastation of Port-au-Prince, where numbers of them had already perished ; it is melancholy to relate, that they here found no sanctuary, and returned in a few

few months not twenty-men strong. In September 1795, this regiment was reviewed by Sir ADAM WILLIAMSON, complete in all its officers, and men; nine hundred and fifty strong; in September 1796, they had not fifty men fit for duty, and in November, arrived at Port-au-Prince from Mirebalais, with hardly their complement of non-commissioned officers. This beautiful corps, in the space of less than a year, lost upwards of eight hundred men, and twenty officers. Such is the melancholy devastation of this climate.

All our troops then, ought, if possible, to be landed at Jeremie, and after undergoing there, a seasoning of some weeks, they may be distributed in rotation to other posts; going first to the least destructive, and continuing a change, till they are able to do duty at Port-au-Prince. The nature of service may occasionally oppose these arrangements, as we must be guided by circumstances, and the position of our enemy. But where these rules can be observed, I am convinced they are of importance, and might be regulated and observed without expence, and with real benefit to the service.

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I omitted to mention, that the Grand Bois, not very distant from Port-au-Prince, is reckoned by the inhabitants equally healthy with Jeremie itself. To this place, troops newly arrived might be ordered. I confess there are some difficulties in the way of these arrangements from our uncertain possession of the island, and the necessity of avoiding expence, in a country which has already drained the British treasury ; as well as proved the grave of the British army.

I remarked in a former part of this work, that a chief difficulty arose in restoring Europeans to health, from the continual application of miasmata, and the relaxing powers of heat itself. Once the patient is weak, we seldom succeed in giving him strength. Languor and debility prevail, in spite of every means we employ. The cold bath, and the use of bark, though they maintain the patient in statu quo, without any progress, yet seldom succeed completely ; because they are powers not constantly applied, or uniformly acting ; whereas the powers of heat are constantly and uniformly applied and acting ; their effects then cannot be counterbalanced, by the action of temporary powers, which
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are only present for a short period, and effect changes of very short duration. The action of climate, on the human body is perpetual; the action of medicines, temporary and short. The effects of climate then, must always prevail, over the action of medicines. Convinced of the truth of this doctrine, by fatal experience; I was always of opinion, that a well-chosen situation at Jeremie, for a convalescent post, would be of the greatest utility. Here the emaciated officer and soldier, placed in a different climate, and surrounded by new scenes, would be invigorated and recovered. The voyage itself would contribute to this desirable end; the movement, anxiety and novelty, would divert the mind from brooding over misfortune, and give to thought a new and more pleasing direction. The coolness of Jeremie, which approaches an European climate, would contribute remarkably to recovery. We are pleased in finding ourselves in situations similar to our native country; our habits are soothed, and our constitutions acknowledge a kindred sympathy; whilst our progress in strength every day delights us. From the first moment I ever saw Jeremie, I was of opinion, that it was a situation highly calculated for a convalescent

valescent hospital, and post ; and that it might not only be itself guarded by convalescents, but also send back to the other posts seasoned men, who having undergone the endemic, and recovered, would feel more confidence and security. In this idea, I was joined by my friend Dr. WRIGHT, with whom I have often coincided in medical opinions ; and we jointly gave in a paper to Sir ADAM WILLIAMSON, recommending this measure. He was however preparing to return to Europe, and did not chuse to enter upon a plan, which might be more productive of expence, than he could foresee at that period. The plan was accordingly abandoned. Mr. WEIR has since adopted the same opinion, and partly converted Jeremie into a convalescent station. Dr. JACKSON, who visited this quarter, intended to have sent there all the convalescents of Port-au-Prince ; but though he recommended it warmly, the scheme was never fully adopted. There were numerous vessels employed by government, at a vast expence, which often lay for a considerable time idle, that might have thus been most usefully, and beneficially employed, for the benefit of the troops. Jeremie was a central point, to which the

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convalefcents of the Mole, St. Marc's, Larcahayc, and Port-au-Prince, might have been eafily fent, and from which they could again be returned with perfect facility. One of the government veffels, might have been fitted up as an hofpital fhip, with an affiftant furgeon on board, and proper remedies, to convey the convalefcents from the other pofts to Jeremie. This fhip, when not actually on fervice, might occasionally run to fea, with fick officers, and afford them a chance of recovery, which they could not have on fhore. And if well armed, ſhe might protect trade, and be a terror to gun boats and privateers. Such a ſcheme, though extremely fimple, and neceffary, was not adopted, after all the recommendation it received. Medical officers can never enforce ſchemes of health; they may recommend, but cannot execute. Perhaps on thefe points, their authority is too limited; though an extenſion of it might interfere with that abſolute power, commanders muſt poſſeſs to enſure general obedience. The expence could not be great, when we conſider the price of every ſoldier to government, before he is landed in that country. Many might have recovered at this poſt, who

languished life away, in the general and convalescent hospitals of Port-au-Prince ; where, though they had good medical assistance, and as much attendance as the nature of circumstances permitted ; yielded at length to the fatal and perpetual action of the climate.

It is true we had at Port-au-Prince, a building we called a Convalescent Hospital, placed conspicuously, in the most unhealthy part of the town. Elevated beyond all shelter, it stood exposed to every land breeze that blew, and arrested the floating miasmata, as they were blended with the air. In this hospital, it could not be expected, that many recoveries would happen ; but as the soldiers sent there, had in general got over the danger of the first attack, they lingered for a longer period ; and either died there, or returned again to the general hospital. The proportion of useful recoveries, was very slender. Indeed, the general hospital itself stood in no promising situation, it was low, and on the borders of a marsh. But on the whole, a better sheltered situation than the convalescent hospital.

Dr. JACKSON on his arrival at Port-au-Prince, surveyed minutely the state of the hospitals,

pitals, and was sensible of their naked exposed situation. He accordingly recommended loose thin curtains to be suspended before all the galleries, and to contain within their shade, the whole ward, in which the sick were placed. This was of great use ; it enlarged the bounds of each ward, by adding the gallery, which before, the sick could not occupy for the sun. It afforded them an agreeable change of place, and a cool retreat from the ward, which the breath of so many sick, had rendered hot, and which was made still more distressing from the groans and complaints of the dying. But it had another advantage, by possessing a loose texture, it admitted the air pretty freely ; and when the land winds blew and were hot, they were rendered cool, by throwing water on the curtains. The hot winds are thus tempered in the East Indies, and rendered pleasant and refreshing ; when they would be otherwise insufferable and dangerous. But besides these purposes, the curtains might answer another very important use : They might probably purify the atmosphere, by arresting the miasmata in their progress, and thus answer the purpose of natural shelter.

S E C T. III.

Considerations on General and Regimental Hospitals—Hospital Corps, unfit for their Occupation—A Medical Board recommended with large Armies—The Qualifications of Physicians examined.

IN this Section, I shall consider some circumstances, which could not enter so properly into the discussion of the subjects we have been treating; but which are intimately connected with them. And first, with respect to General and Regimental Hospitals.

General hospitals have been reprobated by a number of officers, and physicians, without being able to abolish them. The establishment of a general hospital, is always an expensive cumbrous institution. When there are a number of wards, the soldiers, who are able to move, visit one another, and mingle into societies and clubs, where military habits are lost, in riot or idleness. The attendants too, have a similar intercourse, and as they must have charge of the wine and liquors, pre-

scribed for the sick; they are enabled to enliven their meetings, by a considerable share of gaiety. In this manner, the sick are often totally neglected, in spite of every vigilance on the part of those who attend them. Squabbles, noise, and riot, are the result of these associations. It has, I believe, been remarked, that though a soldier may enter a general hospital with all his military ardour thick upon him, that he will never return with it.—And I have seen enough to convince me, of the truth of the observation. Though the soldiers are in general very unwilling to enter, they are equally unwilling to come out; and linger their time in passive languor, or in the more destructive scenes of debauchery. The institution of general hospitals, throws on the medical staff, the whole duty of regimental surgeons; who are thus rendered idle and useless. It was thus at Port-au-Prince, previous to the arrival of Dr. JACKSON, who regulated the regimental hospitals on a better footing. There was indeed one belonging to the twenty-third regiment, which was very well managed; and with little expence to government, under the direction of Mr. BORLAND, surgeon of that corps. Mr. WEIR at the Mole, arranged the regimental hospitals

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in such a manner, that they had very few indeed, in their general hospital. At Port-au-Prince, we seldom had less than two hundred, and often more. The reason was, that there were not, well endowed regimental hospitals, and that the surgeons, the moment a patient was reported to them, ordered him to the general hospital. The consequence was, the general hospital was crowded, and became the receptacle of all the army. Many arguments are in favour of regimental, in preference to general hospitals. The institution itself is conducted with little expence to the public; whereas a general hospital creates an enormous demand, and adds greatly to the expenditure of an army. In most regiments, there is a fund appropriated for this purpose; which if properly managed would prove in general equal to the expence. But if it should not, it would be much better for government to afford them a regulated supply under the inspection of a proper officer, than to institute a general hospital. A regimental surgeon must derive great assistance, from knowing the character and disposition of his patient; which in a general hospital cannot be so well known or ascertained. The patient is attended by his comrades, from whom he will receive more

tendernefs of attention, than can be hoped for in the indifcriminate attendance of hired nurfes. Nor has the patient the fame chance of departing from his military habits and becoming corrupted. The circle in which he is placed is narrower, and his opportunities to err fewer. He is placed more immediately under the eye of his officers, who, by frequent vifits, maintain good order in the ward. To thefe officers, they know they are to return when their health is re-eftablifhed, and they are confcious their behaviour will be noticed and recollected. In a place like St. Domingo, where numbers are at once taken ill, it may not be convenient to obtain houfes independent of public inftitutions to contain all the fick of a regiment. When this is the cafe, the general hofpital, may be divided into departments for each regiment, and their furgeons in that fituation, ought to attend them. If they require medicines or fupplies, which the regimental cheft, or regimental fund cannot fuftain, let them be fupplied from the ftores provided by government for the army at large. It may be asked, how the medical ftaff are to be employed in this arrangement, as the patients in the ge-

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neral hospital are recruited from the several regiments in the garrison? The staff may be most usefully employed in superintending these hospitals, in seeing the mode of practice, in correcting abuses; and in assisting, where their services may be most requisite. This will afford the staff sufficient employment; with the occupation of attending the sick officers in their respective quarters. In this manner, an amazing expence will be saved to government, and the military habits of the soldiers will be preserved; whilst they will have the benefit of better attention, both from the surgeon and their comrades. The surgeons themselves, will have an opportunity of acquiring knowledge and experience; and will be employed in the proper line of their duty.

To correct abuses in the French departments, will occupy the attention of the inspectors in St. Domingo; with the greatest advantage to the country. It is astonishing with what eagerness and acuteness they pursued depredation, and what a variety of ingenious pretexts they formed, to attain their purpose. Nor is it easy to exculpate their leaders from some suspicion of countenancing these frauds.

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The difficulties, with which any improvement was introduced, which proposed reform, or the diminution of expence ; lead to a belief, that they have an interest in supporting the imposition. Dr. JACKSON, found unexpected obstacles thrown in his way, by commanding officers. And it was after much trouble and difficulty that his plans were partially executed. Yet his scheme made a saving to this country of £.50,000 a year ; no small retrenchment in one département.

In this charge, I do not, without discrimination, involve the French officers of rank ; this would be illiberal and unjust ; there are amongst them, men for whom I entertain the highest respect, and who deserve well of this country ; but there are also men, to whom these charges will fully apply, and who have enriched themselves by the spoil of this island.—

HOSPITAL CORPS.

ANOTHER argument against general, and in favour of regimental hospitals, arises from the mode of attendance on the sick. It was impossible at Port-au-Prince, to procure female nurses for the general hospital. It became therefore necessary, to employ soldiers, who having escaped the endemic, or recovered, had more confidence than others. But although soldiers readily attend their own comrades, in the same regiment, they do not so willingly wait upon others. Besides, the regiments to which such soldiers belong, do not easily agree to let them continue in the general hospital. These difficulties, which were represented, gave rise to the levy of an Hospital Corps; from which all such men were to be taken. All the orderly men or nurses, were to be supplied from this regiment; and the military commandant was to see, that they behaved in a decent, regular, and proper manner. He was to attend to the complaints made to him by the physicians and surgeons, and to direct his men, in the most useful manner for the benefit of the sick. To perform these duties, it is evident

evident that the men who composed this corps, should be regular, sober, and humane. No duties are more sacred, than attentions to the sick; no duties require more strictness of manner, or greater decency and firmness of deportment. Such a corps, ought to be composed of the best men of the army, to whom this occupation might be given as a release from severer duty, and a reward for good conduct; as the pay is better than in the ranks, and the service to be performed, not quite so laborious as in the field. But instead of forming this body on these principles, they were made up of outcasts from all regiments; either of men, whom disease had incapacitated for any duty; or of those who had abandoned themselves to drinking and debauchery. Thus constituted, they were much fitter for Botany Bay, or the hospital of invalids, than any employment which required humanity or action. But to these men we were obliged to consign the nocturnal charge of the sick; on these, they depended for drink, and every other assistance during the night. Many neglects must have happened from such attendants. Had this corps been properly made up of well behaved and steady men, it might be of great service;

service ; but in the manner it was constituted, could not be of any use.

Another great difficulty, occurred to the medical gentlemen who had charge of wards. There were not a sufficient number of assistants, to make up the prescriptions, or pay the necessary attention in seeing them taken. On many occasions, a ward containing eighty patients, had only the attendance of one medical gentleman, who was obliged to be apothecary, attendant, surgeon, and physician. It is true, we trained up some careful men to assist in making up preparations, but they could not be wholly trusted to their care.

Such were the labours that medical gentlemen had to undergo in this destructive climate. Others had some rest from their labours, they enjoyed no interval of ease ; no cessation from their toils. The government at home were not to blame for this scarcity of assistants. They had sent out numbers, on the staff, and attached to regiments ; but the climate had swept them away. One man who is once seasoned in that country, and can be depended on, is equal to a host of strangers, who themselves require assistance, and fall victims,

victims, when their exertions are most required. Seasoned men, ought to have every encouragement, and should be fought with diligence; on them only can the sick, rely for assistance. Ere they are seasoned to the climate they must acquire experience; and these two qualities are invaluable. If a service does not reward merit, it will never have men of talents; they will desert it; and employ themselves, where they are rewarded. How many regiments and ships of war, have I seen in St. Domingo, without a surgeon or mate, from the plan of employing young and inexperienced men.—They fell victims themselves, when their aid was most requisite. But supposing, they had lived, what assistance could they have given to the sick; a new scene was presented before them, and unheard of destruction. The rapid progress of an astonishing fever, amazed their faculties, European practice was tame and feeble, former experience only tended to confound them; they were idle spectators, till they themselves perished. It is true, that we must all begin to acquire experience, in a state of comparative ignorance; but those who command armies, ought to chuse their medical assistance from warm climates; which, though they may not present scenes like St. Domingo,

Domingo, will at least prepare the physician, more than the schools of Europe. I am sure I shall not be contradicted, when I assert, that it is absurd to send out physicians from London, to combat the diseases of St. Domingo.—The requisite knowledge for this purpose can only be acquired on the spot, after a long, painful, and accurate attention. Out of seven physicians, all highly qualified in their profession, who were destined for the St. Domingo establishment; only two were doing duty when I left that island. Dr. CLEGHORN, fell a victim to the fever at the Mole. Dr. FELLOWS, after struggling long, to perform his duty, was obliged to retire, in an almost hopeless state. Dr. CAVE, has been obliged to return also; Dr. MASTER, who in a state of illness, nobly continued his labours, underwent much sickness; he and Dr. HENDERSON only remain of the seven physicians who were meant for the island.

Instead of sending medical men from England to those islands, where they have little chance of exercising their profession, or even of preserving their lives; physicians of character ought to be encouraged, from Jamaica, Barbadoes, and other hot climates, where
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similar diseases reign, and where they have been already seasoned. Those who have followed the army and acquired experience, are inestimable, and should receive every encouragement. To a knowledge of the climate, and its diseases, they add another valuable acquisition, the knowledge of the habits and manners of soldiers; the most necessary knowledge to a military physician or surgeon.

Let the most celebrated physicians of Edinburgh or London, be sent out with an army to a warm climate, like St. Domingo; without being previously seasoned, and acquainted with military habits; and I believe they would feel, and acknowledge, the truth of these remarks. It is astonishing that any other mode of recruiting this establishment, should ever be thought of. The army itself, generally supplies a great number of men of good abilities, who have braved the climate, and seen a great deal of practice. To these, in proportion to their abilities, a just preference should be given; when they are not to be found, it is then fair and proper to look out for others, who may be competent to fill the station. But in the West Indies, or in such islands of them, as have a large army, there

there ought to be a *Medical Board*; to examine such candidates as may offer themselves on the spot, and may be requisite to nominate. It is there only, in actual practice, and doing actual duty; that a judgment can be formed of the abilities or industry of any one. Such a board might be composed of two inspectors, two physicians, and two surgeons; who would regulate and fill up vacancies, and recommend the proper people for advancement. — The recommendation of such a board, to the commander in chief at home; ought to insure the candidate, whatever they recommended. In this manner, the service would never be in want of proper assistance; and the diligent, industrious and able candidate, would be rewarded. Men will not chuse to enter a service, and forsake other pursuits, on vague and uncertain grounds; nor is it fair to expect it, without some assurance of benefit. But on the present footing, nothing can be promised, till an answer is obtained from home. In the mean time, the service suffers, by the want of assistance, which might be procured; if the inspectors on the spot, and who alone can be judges, enjoyed sufficient power. I could adduce many proofs of inconvenience and loss to the service, from this management.

Boards are a council, for the commander in chief, to advise him on points, in which he cannot be supposed himself perfectly conversant. Of this kind are medical appointments; of which medical men, ought undoubtedly to have some direction. They are to take care, that no improper person, shall fill any medical situation in the army; they are answerable to the commander in chief for their recommendations, and are in fact to advise him on the medical department. Thus far their powers extend, and thus far they are proper. If it be right to grant these powers to a board at home, it would be still more proper, to grant them to one abroad. The board of England is competent to regulate all the business of the three kingdoms, because the diseases of these countries are nearly similar; and the course of education pursued in our medical schools, qualifies their pupils for this service. Abroad, it is otherwise. No course of lectures, no reading, can qualify for that service. A long experience, and accurate observation, can alone entitle the practitioner to any confidence. The diseases are too rapid for delay, too dangerous for doubts. The physician must at once decide, or the patient is lost for ever.

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A very proper caution, and a very proper respect to an useful form, have been too rigidly adhered to, in the conduct of Medical promotions. In the origin of degrees, or medical graduation, the chief point of importance, was, that by holding out a certain number of professional examinations, through which the candidate must pass, he would be obliged to possess a liberal education, and pay strict attention to his pursuits. When he had passed these trials, he came forth sanctioned to the public, by the approval of a learned body, supposed, impartial judges of his merit. The public became thus guarded against empiric pretenders, against improper and illiterate practitioners. No liberal man will deny these useful and necessary forms; his warmest approbation. It must be confessed, that many universities, departing from the dignity of this form, have prostituted their sanction, to any person, who could purchase their seal and signature. It is therefore necessary, that some colleges, maintaining the purity and intention of the original form, should gain to their candidates a preference.

The benefits of this general protection, against empirics, were very properly extended

to the army of late years only. But the rule has been adhered to, with more than ordinary rigidity. The line of physician to the army has been confined to the graduates or bachelors of the English universities only; some exceptions have been made in favour of Dublin. I have said, that the form itself is highly proper, but I shall go farther, and say, that on a fair liberal construction it cannot be too strictly adhered to. But making every allowance for the celebrity of other universities; I believe it will hardly be questioned, that EDINBURGH, is at this moment the FIRST MEDICAL SCHOOL IN EUROPE. If this is true, as I believe will be acknowledged, upon what principle are the graduates of that college excluded from being physicians to the army? unless they are also licentiates of the London college. It cannot be fairly supposed, that Edinburgh, anxious for the fame of its school, is less strict than the London college in its examination of candidates. If the other universities are less scrupulous, it is no good reason for classing Edinburgh with them, under a general prohibition. An examination at London, will hardly inspire any candidate with sudden knowledge. And I imagine, it will
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not be denied, that a student from the Edinburgh School, is as likely to understand the theory of Medicine, as a pupil of Oxford, Cambridge, or Dublin. Fortunately, science is not confined to any one university, but may be acquired in all, by genius or industry.

But if a restriction is necessary; and I am of opinion it is; let the great seminaries be privileged to offer candidates, viz. The Two ENGLISH UNIVERSITIES, DUBLIN, and EDINBURGH, let their graduates, without any further examination, be eligible, for the office of physicians to the Forces. But it is not surely necessary to oblige these graduates to pass at London. The urgency of service, and the necessities of war, sometimes require that the most positive rules, which guide, in time of peace, be laid aside for the benefit of the service. What will do in time of peace, will not answer in time of war,

These remarks apply to every department of the army. Promotions must be made for the purposes of war, which in time of peace, would very justly be reprobated as improper; as an infringement on the general rules of the

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army. But these cases of necessity cease, when the urgency which gave rise to them no longer exists. The EAST INDIA Company, the most extensive and opulent commercial body in Europe, have laid down very just and proper laws to regulate their service in time of peace; but in time of war these laws give way to casual urgency and unforeseen necessity. If it becomes necessary then on service, and in time of war, to break through established rules, in the great body of the army itself; is it not to be expected that in every lesser department of it, urgencies and necessities may arise, which justify an infringement on general rules, that have not provided for these casualties.

Let us suppose, that an army, well appointed in the medical department, sets out for St. Domingo; but soon after its arrival there, is deprived of its physicians and surgeons, who perish in the fever; let us further suppose, that this army continues sickly, and every day, more and more requires assistance. Jamaica is in the neighbourhood, with many experienced practitioners; but alas! they have not undergone an essential form, they have graduated at Edinburgh or Dublin, and therefore

fore are not eligible. Would this reasoning guide the commander in chief; would he permit his men to perish, because no licentiate of London could be called to their assistance?—

But independent of this difficulty, another serious objection would oppose his procuring assistance. A practitioner in Jamaica or St. Domingo, unconnected with the army, and engaged in other pursuits, would not readily be induced to forsake these, and engage in a service, for a temporary benefit; some inducement must be held out, some permanency offered; but this neither the commander in chief or the director of hospitals can positively do. In these circumstances, which are not unlikely to happen, and which I have seen nearly verified; the army may perish without assistance. From this statement, it would appear, that in certain circumstances, it is just, expedient and proper, to break through rules, which have made no provision for urgency and necessity; for the great casualties and calamities of war. The rule may be proper in time of peace, but does not apply to war.

But independent of the diplomas of universities, which certainly prove, that a man has walked through the formalities of his education, as barristers eat their commons; public testimonies of another kind might be sometimes admitted in favour of a physician to the army. Of this kind, are the publications of medical men, their professional character and success. I should have conceived, that Dr. JACKSON's book on the Fevers of the West Indies, would have entitled him to be a physician to the army; if he had no other testimony, and had never seen London, Edinburgh, or Dublin.

I think upon the whole, that the rule of making licenciates only, physicians to the army, is too rigidly adhered to, and that the power of the director of hospitals is too limited; and that both may be productive of bad consequences to the army. I am not sure, whether it would not be for the benefit of the army, to make it a step, to the surgeons, after a long and approved service, and thus make it a military graduation. This would hold out something to men of experience, to continue in the service, something to reward their toils and labour; at present, it must be confessed, that
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there is no encouragement, to bind a man of talents to the army. I believe, that this was once a plan in the service ; and if strictly but fairly regulated, would prove very beneficial.

Having now gone through this miscellaneous section, I shall proceed to say a few words, on Wines, and some further remarks on Diet, in which some observations will be offered on smoaking; and bilious complaints.

S E C T. IV.

Considerations on Diet, adapted to the Climate—Claret and Madeira compared—Diet recommended by the Author—Smoaking considered—Its Effects—Flannel examined—Cotton Shirts recommended—Bilious Complaints—Causes of Bile—Cure—Of the Prickly Heat—Its Causes and Nature—It is not dangerous or critical—Bathing not dangerous when it is out.—

IN the general remarks offered on Diet, I did not enter so particularly into the subject as might be requisite. I shall here observe, that I think some changes might be introduced with real advantage in the diet of our soldiers in the West; particularly in their drinks. Rum, in the manner they get it, must possess pernicious qualities; it is of the very worst kind, strong and ardent. Moderation is not the most conspicuous virtue among soldiers. I think good porter might be substituted with great advantage instead of rum:—It ought to be of the best quality and bottled in that country:—Of this it would not perhaps be too
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much, to grant each soldier three pints per day. Porter is more nourishing, and less pernicious than rum or brandy ; it has not that active stimulus, which by repetition soon exhausts the excitability, or gives vigour to morbid causes. This might be occasionally varied with spruce beer, or a pint of sound Madeira. On some occasions, such as, when a sentinel is exposed to a cold, or rainy night, a wine glass full of good brandy may, I think be given with advantage ; one as he enters on duty ; and another when relieved, before he lays down. I do not imagine, that this would be injurious, in these particular circumstances. It would tend to support the vascular action, which the application of cold is apt to diminish ; and this diminution of action seems favorable to the invasion of disease. The excitement of a glass of brandy would not be so great as to bring on any formidable collapse. The porter should be so divided, that no more than a pint be taken at a time ; in larger quantities, it brings on drowsiness, and favours the production of bile. One pint might be distributed in the forenoon, mixed with water ; another at dinner-time, and a third at bed-time. This would be sufficient for the supply of
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moisture and nourishment, and would in no degree, produce intoxication.

Thus much, regarding the soldiers; I shall now consider the diet and drink of officers, who live in a manner somewhat different. And first as to wines:—The chief of these used in the West Indies, are Madeira and Claret; port being reserved only for the sick. Good, sound, old madeira, is no doubt an excellent wine in that climate; in this condition the volatile, ardent and spirituous part has in a great measure fled, and the body, consisting of a great basis of water and the juice of the grape remains. But few officers drink this quality of madeira, because it cannot be procured; they are obliged much oftener to use a secondary kind, into which a good deal of brandy has been thrown. This sort of madeira, is nothing more than a mixture of brandy; and the drinking of it must be very pernicious, and afford many opportunities, for the attacks of fever. Claret is less subject to adulteration, and when sound, and of a good body, appears to me the fittest wine for the East or West Indies. It possesses more of the nutrient grape, and less of the spirituous

spirituous part than madeira; and it is not by any means so apt to intoxicate; it possesses besides an useful laxative quality. Supposing then madeira and claret, to be of equal good qualities in their kind, I should give the preference to claret. I believe it less injurious to the constitution; less stimulant and heating; and more temperate and nourishing. Fashion and accident frequently guide mankind in the choice of the most important things; no wonder that they should rule their luxuries, which are their offspring. In the East Indies, universally, a preference is given to claret; in the West, madeira bears the palm. The claret used in India, under the name of English claret; or claret for the London market, has always appeared to me the best kind of it; it has a full body, and is somewhat more powerful, than what the French themselves used. I believe, it will be generally allowed, that claret neither intoxicates nor heats the body so soon as madeira. These two circumstances, are in my opinion a good ground for a preference to claret: but many are deterred from drinking claret, from an idea that it has not stimulus enough for a relaxed stomach; or that it is, what they call too cold. I believe this objection to be partly fanciful;

fanciful; but to prevent this danger, a few glasses of madeira may precede the claret, so as to heat and warm the stomach; or what would answer equally well, a half wine glassful of brandy; with this foundation, the claret may be taken without any danger to the stomach. There are many who believe that pretty hard drinking contributes to their safety in a warm climate. I am by no means of this opinion, for I think in its consequences, it subjects them more readily to the invasion of fever; but moderate living with a due proportion of solid, and liquid nourishment, contributes to the maintenance of health, and preserves the constitution from disease. It is very difficult to draw the line accurately; but I should think it a good general rule, to eat small portions of animal food; to eat soup or broth, and to let vegetables have a place in our repast. As to drinking, we may perhaps do well not to exceed what promotes cheerfulness and a social spirit, without intoxication. The quantity which in different constitutions produces this disposition, is as various as the constitutions themselves. But I should imagine, that a bottle of claret after dinner, when a person sits two hours, cannot prove injurious to the constitution; for in
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this climate there is a constant perspiration going forward, which exhausts the body, and diminishes the fluids, unless a constant supply is supported: and as the proportion of animal food ought to be diminished, from which the chief nourishment is extracted, this mode of deriving it from fluids, becomes more necessary and useful. Perhaps a life of absolute sobriety, would not conduce to health in the West Indies; the system would become too weak and languid; and obstructions might happen; so that sobriety itself might be an error; but to this error few officers are likely to fall a sacrifice.

But it must not be supposed, that I am encouraging debauchery, or drunkenness, when I recommend a rather generous manner of life. There is a great difference, between living well, and living freely, between moderation and excess; but we observe, in warm climates, that the natives, who live entirely on vegetables, and to whom religion forbids, wine and animal food, are weak, timid, and incapable of exertion. They do not attain the strength or activity of their neighbours, who indulge in these articles of food. The Gentoos, or Hindoos, are not so athletic as
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the Mahometans or Persians, who are not restricted by the same laws of abstinence. Hence, it is fair to conclude, that moderate portions of wine conduce to vigour and the maintenance of health.

It is a custom in the West Indies, founded on sensation, to drink during the forenoon, and the day, some diluent refreshing drinks; this is done in obedience to thirst, a very imperative sense. Weak sangoree, or a drink made up of sound madeira, water, acid, and sugar; lemonade, tamarind water, and such compositions, are cooling and pleasant; and may contribute to health by supporting perspiration. Perspiration greatly conduces to health: it preserves, by the evaporating process, a great coolness in the body; it relieves the vessels from the distention of the fluids, and permits the expansion by heat to go on without pain or detriment. It diminishes the saline and stimulant part of the blood; and it may throw out of the body the miasmata themselves, which excite and cause fever. The obstruction of this most useful discharge, must be productive of the worst consequences; but it can only be supported, by keeping up a regular supply of fluids, which these mild

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diluents very amply do. It is sometimes astonishing, how quickly it is produced after a drink of this kind; it bursts forth almost immediately. Whenever I found the perspiration diminish, and my skin becoming parched or dry, I used to re-establish it immediately, by a draught of sangoree, or lemonade. A free perspiration, is the surest preservative of health in a hot climate. In carrying on duty at St. Domingo, I was exposed to a good deal of riding, being generally six or eight hours on horseback every day; and consequently I perspired very freely.—I never, wore flannel, but made use of cotton shirts. It was not unusual with me to shift five times a day; sometimes oftener, each shirt being drenched in perspiration. To this profusion of it, I attribute my safety, amidst so much exhalation of miasmata, for so long a time. I drank freely of lemonade, sangoree, tamarind water, weak wine and water, and other diluent compositions; and when night came, I was always prepared to enjoy my repose.

The tea breakfast, used by us in the West Indies, appears to me less suited to the climate, than the breakfast of the French; though I think, they rather incline to excess. What

is called a second breakfast in our islands, does not seem to me calculated to support health. But I do not object so much to tea itself, on the ground of its being, what is called nervous, as to the quantity of warm water we drink with it; which is certainly relaxing, and which tea is not calculated to correct. Now it is of the utmost consequence, to preserve the powers of the stomach, as entire as possible; for the vigour of the body increases, or diminishes in proportion to the powers of this most essential organ; from which as from a center, strength and nourishment are propagated to the rest of the system.— But warm water is not calculated to strengthen the stomach, or add to its energy; on the contrary, its long continued use must relax, weaken, and impair its powers; nor is the rest of the breakfast calculated to inspire vigour. The butter is seldom good, nor are oils easily digested. The breakfast which I used, and found light and nourishing, was made up in the following manner. With bread, I used fresh eggs, or a small portion of tender beef steaks, or broiled pigeons, or a slice of beef; and instead of tea and hot water, I drank cold water with a fourth part claret. This breakfast I always found
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light, and easy of digestion. The first part of it, afforded sufficient nourishment, without creating bulk; and the cold water and claret braced the fibres of the stomach, and gave them strength. I placed great reliance, on the water's being very cool; to effect which, I had it in a jar of a loose clay texture, through which the water perspired, in the day time; and in the night it was exposed to a stream of air; so that in the morning, it was cool and pleasant. After this breakfast, I found myself light and vigorous, and equal to the duties of the day. I must confess, I think it more salutary, than tea, hot water, and rancid butter. I never indulged in suppers, which I think are too heavy meals, for a hot climate. The stomach must be assisted by exercise to perform its functions; it is not so powerful as in Europe; and as it has not the advantages of exercise to assist it after supper, that meal may be laid aside with advantage.

Some caution is necessary in the use of fruits, in which strangers are apt to indulge immoderately at first. I think the use of them is more salutary at breakfast, than after dinner. They are applied more closely to the coats of the stomach; there is more exercise to digest

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them; and the taste itself is more pure, and is a better guide than after dinner. Oranges, melons, pine apples, plantains; in moderate quantities; are good and safe fruits; there is another which is not inaptly called vegetable marrow, from its resemblance to that animal substance, which may be used with great safety. —I have seen a preparation of it, with lime juice and sugar, which resembles in taste strawberries and cream. It will not be a bad rule to restrain the appetite for some time, in the use of these fruits, gradually allowing more indulgence, till they can be used with perfect safety. That the stomach may not give way too much to a new stimulus, it will be a proper rule to take a little brandy after using fruits; and in this manner, I think they may be taken with safety and advantage.

Nature, in every climate, seems to have produced, what is more immediately useful and grateful to its inhabitants.—In most countries we not only find the necessaries of life; but that kind of them most suitable to the nature of the climate. Nothing can be so grateful to the thirsty palate, as the mild acids of the orange and tamarind; nothing more luxuriant, than the delicate flavour of the pine apple or

the mangoe. These happily abound, where they are most requisite and grateful. Every warm climate abounds in them; the poor and the rich may banquet at nature's luxuriant table.

I have seen a practice pursued in the army, which I think very improper. I allude to the giving the men ardent spirits previous to their undertaking fatigue. Nothing can be more preposterous than this practice; instead of enabling men to bear fatigue, it wholly unfits them for it. If it is meant to create a temporary frenzy, in a desperate attack, it may perhaps answer the purpose; but unless the enterprize is effected in a moment, we will be disappointed; the languor soon follows the excitement, and renders them passive; and it has been already shewn that great walkers, and men who undergo the greatest fatigue, are those who live moderately, and during the performance of those exertions use water chiefly.

Great portions of animal food exhaust the system, like the use of ardent spirits; the excitability is wasted, and an inclination to sleep induced. Previous to the undertaking

of any serious service, where fatigue is expected, the canteen of every soldier on parade, should be examined, and filled with lemonade or water. No spirits or mixture of spirits should be permitted, till the service is performed, when greater indulgence may be granted. In the state produced by spirits, soldiers either become rash and disobedient, or obstinate and cowardly. In a state of sobriety the influence of habit and discipline, will make them follow their officers and obey orders.

I come now to speak of another luxury connected with health, which officers and soldiers use in the West Indies, viz. **SMOKING TOBACCO**. This is an artificial luxury, few men naturally take to smoking tobacco; because it is at first highly unpleasant, and a taste for it can only result from perseverance and habit. Smoking in India is a real luxury; the hookah contains, the most grateful odours of the Eastern spices; the tobacco itself is of a particular delicate kind, and is so involved among other ingredients, that its peculiar smell or flavour are not perceptible. I have seen European ladies, sit in the rooms, where gentlemen smoked, to enjoy without trouble, the fragrant smell, the hookah diffused;

fused; nor do I recollect, that I ever saw it unpleasant to any stranger. The smoking of tobacco has no claim to this character; it is almost universally disagreeable on first trial; and it requires no small effort to persevere, and render it pleasant.

It is not easy to ascertain, what first led to the origin and commencement of this practice. Perhaps an opinion of its medical virtues, induced some, whilst others commenced from mere idleness. The languor of heat, and the inactivity of cold, have equally produced smokers, because the effect is nearly equal. In Asia, the more elegant luxuriant methods are employed, which amuse and excite, the gay and volatile inhabitants of these fertile regions. The Turks delight, in the pleasant fancies, and delirium of opium; whilst the more phlegmatic, and less irritable inhabitants of Kamtschatka, and Holland; use the more powerful stimulus of tobacco, which alone can rouse their torpid and lethargic habits. In the West Indies, the only improvement on the Dutch method, is the use of the segar—which is a milder kind of tobacco than the Virginian. In some places it undergoes particular management; it is exposed to the sun,

after being repeatedly washed in water; so that the strong essential oil is dissipated and evaporated, and the leaves rendered milder. After this preparation, they are rolled up into tubes for use. The Spaniards are famous for their segars, which by connoisseurs are supposed to excel all others.

There cannot be a doubt, that the use of smoking has been pursued for years, by men who have not materially suffered from it; just as men pursue a course of drinking, without seeming to receive injury. But this is a negative and very doubtful proof of its healthfulness. When we attend to the effects of smoking, we find, that after proving a very considerable stimulus, great languor is induced. For tobacco produces nearly the same effects as ardent spirits or opium. It exhausts excitability, and exposes the constitution to the action of morbid powers. The worst effect of smoking tobacco, is the loss of saliva or spittle, which it produces. This not only weakens the system, by creating an unnecessary evacuation, but proves also highly destructive to the digestive powers of the stomach. For there is no doubt that the saliva, which forms a large portion of the
juices

juices which blend and subdue the ingesta of the stomach; possesses great power, in the process of digestion. It has been proved in Dr. BLACK'S experiments, and in those of IRWIN, that the muscular powers of the stomach have less influence on digestion, than was generally imagined. The liquors which seem to act as menstrua to the food, appear to carry on the digestive process, with little reliance on the muscular structure of the organ, where it is carried on. The expulsion and propelling of the mixed mass, seems wholly to depend on the muscular fibres of the stomach; and something must be granted to their action in the digestive process itself. For digestion is seldom well performed, where we have reason to suspect relaxation in the fibres of the stomach; and we find, that we improve the appetite and digestion, when we succeed in removing the relaxed state. But whether this lax state of fibre, affects digestion from the mere effect on the muscular fibre, or by changing the nature of the gastric juices, so as to weaken their powers; cannot be easily ascertained. At any rate, if it be admitted, that the saliva, is necessary or useful in digestion, the waste of it by smoking, must prove highly injurious to that process. And in fact,

fact, I have seen it so repeatedly; few of the eminent smokers, are able next morning to enjoy their breakfast, and make no great figure at dinner. I had an opportunity in my own house at St. Domingo, of remarking particularly the effects of smoking. A very amiable young man, lived with me for some weeks; who was uncommonly attached to his segar. He began as soon as he was out of bed, and continued it all day, with little intermission, until bed time. The consequence was, he lost his appetite almost entirely, he could not digest any solid food, he lived on soup, and other light articles; he was thin naturally, but became more emaciated, from the continuance of smoking. This marasmus or wasting, and the loss of appetite; I attribute entirely to the great expenditure of saliva by smoking.

I have seen in many people of a costive disposition, that the stimulus of smoking, communicated from the mouth to the stomach and intestinal canal; has produced action in them, and procured a stool; many people smoked for this purpose only. The soldiers smoked for pastime, and to obviate the effects of rain. It raises the pulse, and
maintains

maintains a considerable excitement in the system; in this way it acts in the same manner with ardent spirits or brandy; and may in moderation be really useful. Like other stimuli, the quantity and duration must be increased; otherwise smoking loses its effect; at length it becomes a necessary habit, and enslaves the constitution.

Upon the whole then, it seems to have had its origin, from lassitude and idleness, and to have been perpetuated in climates, where these dispositions are created from extreme heat or cold. It would seem on the whole to be inimical to health, by wasting the saliva, so necessary to digestion, and thus weakening and diminishing the appetite. But that in particular situations, the stimulus of it may be moderately used with advantage, to promote the expulsion of the fæces, and to resist the influence of cold, by supporting vascular excitement. But in general, it is used too freely in the West Indies, to an extent, and duration, that brings on debility; and leaves the system exposed to the attack of disease. It is unfortunately introduced in the hours of drinking, when the taste is vitiated, and our sensations less perfect, and it is not un-

common in these circumstances to see it continued for five or six hours. The consequences may be easily imagined; languor and debility are experienced throughout next day; the appetite is destroyed and all vital energy diminished. No situation can be imagined; more inviting to the invasion of Fever. And I have seen many instances of an attack the ensuing day, after excessive smoking; to which no doubt excessive drinking had been conjoined,

Before I close this section, I shall add a few observations on Flannel, as used now very generally by our troops in the West Indies. The great use of flannel next the skin, has appeared to me, to be the maintenance of an artificial, but uniform climate, which prevented slight vicissitudes of weather from affecting the soldier; when necessarily exposed to it. Another use, which may be almost reduced to the former, is the absorption of perspiration, which in a linen shirt, would be applied cold to the body, and check the energy of the vascular system. That flannel, may in some degree produce these effects I believe, but I imagine it has contributed much

much less to the health of soldiers in the West Indies, than may be generally imagined. It appears to me, to debilitate, by exciting too much perspiration, and keeping it incessantly up; and to render the soldier less fit for the casualties of service, by creating a great artificial sensibility, alive to any considerable change. Besides, the soldier feels incumbered, hot, and uneasy in his exertions. But a worse consequence still, is apt to result from it; it may become the nursery of disease, by retaining the exhalations from the body, and having them again applied with the chance of absorption. It is well known, that no attention can prevent the soldiers from wearing it too long; when it becomes a foul nursery of uncleanness. They cannot carry with them a sufficient number of these shirts to change as often as they ought; in fact, to be clean or comfortable, they ought in a warm climate to shift every day.

Instead of the flannel jackets or shirts, which are heavy, hot, and uneasy; I would recommend, what I think would answer the purpose much better, without any of the disadvantages mentioned; I mean cotton half
 shirts

shirts without sleeves, in the manner worn in India under the denomination of banian shirts. These would be easier carried about, the soldier could pack up a good number of them, as they do not fill up much room, by which means he could shift oftener, and keep himself more clean. These would absorb the perspiration, and create less heat; they would preserve the soldier from the danger of vicissitude, and dissipate his vigour less, than the flannel. He might always have a sufficient number for the necessary change. During all my labours at St. Domingo, I never wore flannel; cotton shirts were my only protection, and I found them sufficiently comfortable amidst every vicissitude.

I have now discussed almost every thing I judged of any importance to touch, relative to the health and preservation of troops in the West Indies; a subject of great importance, were my abilities equal to the weight of the discussion. I have fairly stated what I saw, and the conclusions I drew on the spot after much experience. I think it is the duty of every practitioner to come thus forward, and contribute to our stock of facts, and the mass of opinions. Subjects appear in different lights to different physicians,

physicians, and in the variety of positions, we may at length gain the most distinct view of which they are capable. Before I come to the Appendix, which is only in proof, that the reasoning I have employed has obtained tacitly in medicine, I shall subjoin a few remarks on BILIOUS COMPLAINTS; and what is called the PRICKLY HEAT; both very troublesome diseases.

OF BILIOUS COMPLAINTS.

NO subject on which, professional men, or patients, speak more inaccurately or loosely, than on what relates to the secretion, or production of Bile. Bile in warm climates, has the same general agency ascribed to it, that in colder regions belongs alone to the nervous system. Every complaint which is any how complex or inexplicable, is *bilious*. Diet is divided into what is bilious, and *not bilious*; as if it was instantly converted in the stomach itself, into this fluid. It may be proper then to take a short view of this subject, so as to speak on it with more accuracy. It is hardly necessary to premise, that the bile

is

is not a liquor produced or generated in the stomach itself; at any time, or in any circumstances; that diet of any kind, can only produce a larger quantity of this fluid, by acting on the liver and its vessels; through its consent or vicinity to the stomach. That its excess only can be a disease, as a certain quantity of it, is essential to the purposes of digestion. The liver is the seat of this secretion alone. It does not exist at all in the stomach, but is wholly derived from this gland. But from the neighbourhood of the stomach to this organ, whatever affects it will in some degree affect the liver also.

Bilious affections, or an increased flow of bile, occur either singly and distinct, or combined with other diseases; I shall confine myself chiefly to those accumulations of this secretion, which arise more especially in consequence of heat. The circulation of the blood in the liver, is carried on in a particular manner, a vein is made to perform a double office; and the movement of the blood is more slow, than perhaps in any other organ of the body. The general effect of heat, must be felt here, as in every other part of the system, and as the circulation is usually quickened,

ened, larger quantities of blood will pass through the hepatic vessels in a given time. Heat besides, may stimulate the glandular structure of the liver itself; it certainly imparts sensibility and irritability to every organ. There is reason to believe that most of the secretions, are increased by heat. The semen is more copious in warm climates, than in cold ones, this, and the irritability of the whole system form one cause of the "Cupido Veneris," so remarkable in tropical regions. We are led to conclude, that heat itself, independent of other causes, operates powerfully in causing large secretions of bile. Because such secretions, are seldom observed in cold climates, and because, when they do occur they seem to arise from causes, which operate in a similar manner to heat, or rather produce heat itself. Thus the immoderate use of ardent spirits, debauches of wine, and violent exercise, are known to produce great secretions of bile. Whatever remains for a long time in the stomach, and resists the process of digestion, is apt to bring on a large secretion of this fluid. Of this kind are veal, lamb, eggs, salt meats, pickles, cheese, oils, and fat meats. Large quantities of porter, likewise increase the secretion of

T

bile.

bile. Smoaking tobacco, or whatever stimulates the general system, or more especially the stomach; contributes to this secretion. These, by making the fibres of the stomach act, either with unusual vigour, or for an unusual time; by stretching them, or by creating bulk, and pressing on the liver; in all these ways, perhaps, contribute to an increased secretion.

Unusual secretions of the biliary fluid, are emphatically called, "The Bile," and constitute often, a very troublesome disease. Many ideal doctrines, and absurd notions, are entertained on this subject; people imagine, that what they eat or swallow is converted into this fluid in the stomach. This opinion can only arise from want of anatomical knowledge. It has been shewn, that heat of itself is apt, and in fact does produce, a tendency to large secretions of bile, in warm climates. If heat produces this effect, by stimulating the vascular system, and expanding it, how much more powerfully must it act, when aided by other causes, which increase irritability and sensibility; and which add to the circulating mass, that must pass through the liver; or solicit in that organ itself, a more vigorous action,

tion, by the sympathy and contiguity of the stomach. Heat assisted by these causes, produces enormous, and morbid secretions of bile. To the co-operating causes, may be added nausea, one of the most powerful agents in the increase of bile. The causes which increase the secretion of bile from the liver, may be reduced to the following

H E A T,

Nausea or vomiting, in whatever manner
excited;

The immoderate use of ardent spirits or
wine,

Violent exercise, especially after meals,

Viscid food, whether solid, or gelatinous;

Heavy meals, over distending the stomach.

Fat or greasy food, oils, and acids.

Depressing affections of the mind.

A morbid sensibility in the liver itself;

Obstruction in its vessels.

To one or other of these causes, may be referred all the bilious cases, I have ever seen. In some, several of these causes combine, and render the disease very obstinate.

Having now enumerated the causes, which produce large secretions, let us attend to the symptoms, which they commonly bring on in the system.—The first is, usually, a general sense of weariness, with a slight aching in the bones; and a desire to recline, with a constant inclination to sleep. The appetite is impaired, or becomes suddenly voracious; but a preference is given to hot dishes, with large quantities of spicery; such as currie.—When the patient has eat heartily, the symptoms for a time disappear; and lead him to believe that he is well. The skin becomes dry, and a peculiar uneasy heat, is felt in the palms of the hands and soles of the feet. The eyes are moved with uneasiness and pain, a general languor prevails over the body. Perspiration in general is much diminished, the face alone appears moist; now and then a sudden burst hot and disagreeable affects the hands. The tongue is covered with a deep yellow tinge, a head-ach comes on, the vessels of the adnata, wear a slight yellowish colour, sometimes deep; the patient is restless, anxious and uneasy; sleep is turbulent, interrupted by irregular recollection and slight delirium; and the head-ach itself encompasses more particularly the eyes and sockets. The
nausea

nausea is especially distressing in the morning, on the first attempt to get up; the pulse becomes very frequent and the heat intense. The belly is most frequently bound, though now, and then a diarrhœa occurs, with a particular scalding sensation at stool. These symptoms continue for three or four days, till the bile is carried off; they are more or less violent in different constitutions, according to the nature and circumstances of each; and perhaps, the absolute or positive quantity of bile in the stomach. Bile even in its most natural state, and quantity, proves stimulant, and excites the action of the intestines and stomach; it must prove still more so when applied in large quantities, and when the stomach and intestines are in a more irritable state. Perhaps too, that these secretions made from larger supplies of blood, and in a state of acute sensibility in the organs, are in their own nature more stimulant and active. We know, that certain circumstances of the organs, render the secretions much more vigorous and stimulant, giving them entire new qualities. The saliva of the dog, is perfectly harmless in the healthy state of that animal; but when the secreting organs have undergone a change, in the madness of this faithful at-

tendant, this very saliva becomes one of the most vigorous and formidable poisons. Again, the state of the organs, being changed, the effect of any fluid on them, supposing it unaltered, will be very different. In the Remittent, the irritable stomach rejects its natural and mild juices ; the semen passes through the flaccid penis, without any sensation ; but when it is full of blood, and in a state of temporary inflammation, the same fluid creates convulsive motions, and pleasing sensations. If the bile then should not be altered in its qualities, but increased in quantity, and applied to the stomach in a certain condition, it will produce morbid effects. But there is reason to be persuaded, that no secretion is ever increased or diminished, without being changed in its qualities, because the condition of the secreting organ is changed ; and therefore it is not improbable that something unusual is produced in the nature of the bile, when it is secreted in large quantities. All our organs are apt to be thrown into action by any unusual stimulus, though apparently very mild. But if the condition of the stomach be more irritable, and the quantity or quality of the bile is altered, are we not to expect a very vigorous action of that organ ; and in fact, we find

find it so—unfortunately too, this very action of the stomach to relieve itself, by its vicinity and consent with the liver, affects this organ, and induces larger secretions. Natural vomiting however, affords a temporary relief; but as the bile is again flowing into the stomach, the head-ach and nausea return; and the same process is repeated several times before any permanent relief is obtained. We seldom attain repose, until the bowels are opened, either by the bile itself, which is not uncommon, or by means of medicines. This process of bilious secretion, is what is termed in the East and West Indies, a “Fit of the bile.”

I have now given the general history of its symptoms; they are not so violent in most cases, as I have described them, though I have seen all the transitions mentioned, occur in many cases; and not unfrequently in myself. The languor, drowsiness, heat in the hands, and loss of appetite, generally warn the patient of the approaching disease; and if means were early used, it is probable, that no serious accumulation would ever happen.

To prevent morbid secretions of bile, the occasional causes must be avoided. All food

or drink, which from their nature are apt to remain long in the stomach, should be very sparingly, or not at all used. The stomach should never be over distended either with solids or fluids—for this very distention unquestionably creates bile. Suppers, smoaking, and ardent spirits, by throwing the stomach into action, favour the production of this fluid ; and should be carefully avoided. Very young gelatinous meat, resists in a remarkable manner the action of the stomach, and therefore favours the increase of bile. Pork, veal, butter, cheese, smoaked beef, salt meats, resist the powers of digestion in hot countries, and should be avoided by those, who are subject to biliary disorders.—The diet should be light and easy, composed of fully ripened fruits ; and large portions of vegetables, with a small quantity of animal food ; such as roast mutton or beef, or fowls. —White wines, especially sound madeira, from a long experience, I can venture to recommend in preference to the red ; of these claret appears the least hurtful. Beer and porter must be sparingly used, as they seem in such cases to be very prejudicial. I have indeed seen cases, where porter created a diarrhœa ; in these peculiar circumstances, it was an useful remedy. Riding, and cold bath-
ing,

ing, are likely means to prevent accumulations of bile. By attentions of this kind, the disease will seldom come on.

Let us now see, what we are to hope from medicine, when there is an increased secretion of this fluid. Two plans offer themselves, for the expulsion of bile ; viz. to employ cathartics, and remove it by stool ; or emetics, and remove it by vomiting. When bile has been largely accumulated in the stomach, and produced reaching, it is sometimes necessary to assist the process by emetic means. This is for immediate relief. But unless in these circumstances, or pressed by severe headaches, I imagine vomiting an improper plan. So far as my observations extend, I have uniformly found, that vomiting and nausea, in whatever manner excited or conducted, seemed always to increase, and in fact to produce bile. I have, therefore, classed these as exciting causes.

In sea sickness, and in vomiting caused by medicines ; a great quantity of bile is often brought up, which is commonly supposed, the cause of the previous sickness, though it is much oftner the effect of the nausea and reaching. One

reason would however induce me in particular cases, to employ full vomiting. I cannot conceive how such an immense flow of bile could assail the stomach, considering the situation of the common biliary duct, unless an obstruction either by spasm, or some other means, existed in the duodenum; below the entry of the duct. By this means the entry of the bile is prevented, and it is regurgitated into the stomach. To remove this obstruction and spasm, vomiting may be sometimes tried, and I think I have seen cases where it seemed to be useful in this way. But after all, I think the best plan of treatment, when accumulations have happened, is by laxatives and purgatives. Salts I have found to evacuate the bilious secretion more copiously, and to leave the patient more free from all its symptoms, than any other medicine. The only objection to their use, arises from the nausea they produce; this may in a great measure be obviated by dissolving the salts in simple cinnamon water, which I have often successfully practised. Laxatives, which teaze and irritate the stomach and bowels, do not seem calculated to evacuate the bile, for in fact, by their long continued irritation more is produced.

Perpiration and urine, are means of carrying the bile away. I have seen instances, where the urine tinged linen of a pretty deep yellow, where no jaundice existed; and the perspiration has often produced the same appearance in a slighter degree. In order to promote perspiration, I have sometimes prescribed, a few grains of James's powders, joined to a laxative; which being given over night, produced the double effect of increasing the discharge by the skin, and emptying the bowels. If the first dose of salts does not entirely free the patient from all bilious symptoms, a second dose must be prescribed; and the quantity of salts diminished, so as to obviate the nausea, which I have classed as an exciting cause.

Calomel, has been esteemed in India a most successful remedy, in all bilious complaints. I believe this opinion derived strength, from the great utility of it in hepatic disorders. Calomel, if given in a dose sufficient to purge, seldom performs this office without griping, and nausea; and if given in smaller quantities, it does not answer the purpose, and is very apt to produce its peculiar effects on the constitution. But the fact is, that calomel is seldom
prescribed

prescribed singly, it is commonly joined to cathartic extract or aloe, and aided by salts. It does not appear to me, to possess the amazing virtue ascribed to it in India; though I do not deny, that I have sometimes found it convenient and useful. The ease with which it can be taken in pills, has no doubt added to the character of this medicine, as the nausea which is sometimes the cause, and sometimes the effect of bile, renders it difficult to administer any bulky or disagreeable composition. Calomel pills, are certainly less nauseous and more commodious than salts; and the quantity may be so managed, as not to cause any great perturbation; but I am of opinion it never clears the stomach or intestines so effectually as salts. Many practitioners of India are of the same opinion. Their common method is to order a calomel pill at night, and a small dose of salts in the morning, and I believe this to be good practice. The calomel pill produces in the stomach and intestines, the purgative commotion; after which a very small dose of salts will procure a very free evacuation. Such evacuations must be repeated, till the patient is relieved from the symptoms we have already mentioned; till the languor and drowsiness are vanished. But calomel can only operate as a
purgative,

purgative, with the disadvantage of having a rough operation, and of producing at times a salivation, a dangerous accident in warm climates.

Much may be expected, from attention to the occasional and exciting causes in preventing a fit of the bile. General temperance, and moderate exercise, will greatly contribute to this end. When the smallest tendency, or the least symptom appears, the patient ought to take a little castor oil, an excellent and innocent laxative, or a small dose of salts, and for some days adopt a lower diet, and less exercise. If there is an habitual tendency to the production of bile, from the effect of heat alone, it requires minute attention to diet, and every circumstance already enumerated, which conduces to excite the disease. Gentle riding and cold bathing, I have found in such circumstances to be highly useful.

The bilious habit is very difficult to cure, once it has established itself. I have reason to believe, that a slight mercurial course would be very useful in diminishing the tendency to large secretions in the liver. In several cases, in the East and West Indies, where the bilious habit

habit prevailed, I have had occasion to use mercury, for other diseases, and remarked how soon the system was fairly loaded or affected ; that the bilious symptoms abated and disappeared. This may be perhaps attributed to other circumstances, such as changes in the mode of living ; but these were not so sudden as to produce this revolution in the habit. Future experience must decide, and enable us to determine it fully. Bile appears more or less combined, with all the fevers of India, and with the fevers of the West Indies ; and I believe with the fevers of all warm climates ; it is an attendant on our own autumnal fevers, and in various shapes gives rise to disorders of the stomach and bowels.

Savages, and rude nations, are in a great measure exempted from this disease, particularly those, whose religious institutions forbid wine and animal food ; from this we are necessarily led to conclude, that our refinement and luxury of diet, are the causes of our being so much troubled with this disease. It renders all the fevers in which it makes its appearance, more complex ; but from the enumeration of its own particular symptoms, many appearances may be explained, which
render

render the type of these diseases complicated. No disease is so often mentioned to the practitioner of a hot climate, as the bile; the inactivity and languor, which it produces, the loss of appetite, and dislike to all exertion, are no doubt very serious grounds of complaint. But unless the patient possesses more than ordinary fortitude and perseverance, in a plan of abstinence and restriction, there can be little done, without the assistance of an European climate; that is, without getting from the influence of a cause perpetually acting on the body. For medicines can afford temporary relief only, if the secretion is caused by the heat of the climate. Medicines are temporary powers, which cannot be used very often without danger; and they are opposed to the action of a power, which never ceases to operate, and always acts, with more or less vigour. In cases of this kind, where attention to diet, and the other means fail, and where the disease seems to result from the influence of heat alone, the patient ought to seek colder regions, as his only resource. Here he will in all probability recover, unless great obstructions have taken place. It may be a good general rule, to use purgative mineral waters, and to take a good deal of exercise on horse-

back or an open carriage ; but if these fail, recourse must be had to mercury. When the influence of a cold climate itself, and the use of mineral waters, do not succeed very soon after the patient's arrival, there is reason to suspect obstructions. In ordinary cases, the change of climate alone is sufficient to produce every thing that is necessary.

A great variety of ridiculous methods are used in warm climates, to prevent, or what they term, to cut the bile, in which considerable confidence is placed ; but which, of themselves, have never appeared to me to possess any power. I have known much confidence placed in swallowing a raw egg, beat up, shell and all, in a mortar, and taken very early. This preparation might operate as a laxative, and certainly promote the evacuation of bile ; but in any other mode, I cannot conceive it would have any effect whatever. If it remained in the stomach for any time, from the viscid nature of the white part, I should be inclined to suppose, that instead of preventing, it would, by supporting an irritation in the stomach, cause a larger secretion of bile. At any rate, I cannot perceive any manner, in which it could be remarkably antibilious. The shell
has

has too little calcarious substance to be of any great use, as an absorbent, and the contents of it, possess no chemical activity, to form new combinations or neutralize the bile. It is however a popular medicine, and as it does not do any perceivable harm, and flatters the hopes of the patient, I never forbade it.

Many suppose; that popular remedies of this kind have their origin, in a discovery of real virtue in them: this may be sometimes the case; as accident unquestionably has put us in possession of valuable remedies; but in general, popular remedies are the offspring of superstition, or the cunning of quacks. It is however dangerous for the physician to interfere with them, as his opposition is generally ascribed to ungenerous motives.

Another preventative of some reputation, is the swallowing of an orange, immediately on getting out of bed; this is a remedy much extolled. I confess, I hold the same opinion of its powers, with the preceding; it is believed, that its operation is laxative, and in this way, it may have a good effect.

But of all the remedies which are used to "cut the bile," spruce beer has been held in

the highest estimation, and I have heard many great drinkers of it declare, that it was impossible to be bilious, if only a sufficient quantity of it was taken. I have tried this medicine myself, and taken a bottle of it, the moment I got out of bed ; after which I rode, and I certainly found it, a very pleasant and brisk laxative. With respect to the orange, I never eat one, when I had reason to suspect the presence of bile in my stomach, without feeling myself instantly sick, and inclined to vomit ; I do not know, whether others have experienced similar effects.

Water cresses, and lime water, have had their share of reputation, as preventatives of bile ; I cannot speak of either, having never tried them. Water cresses must however be a feeble means, and can only act, as a part of a system of diet. Of lime water, I should be inclined to think more favourably. It may strengthen the fibres, of the stomach, and diminish morbid irritability, and thus contribute to diminish the secretions from the liver, by lessening all irritation in its neighbourhood. No questions are more frequently put to physicians, and none more embarrassing ; than whether this or that dish is bilious ? These questions

questions are usually asked at table, where there is not much room for discussion. An answer must be given, and this answer goes abroad as a medical aphorism. It is a pity, that they do not recollect, that what may prove hurtful and bilious, in one stomach, may not have any bad effect whatever in another; and that it is excess in general, which renders any article of diet hurtful. But they believe, that certain substances dissolve themselves into bile in the stomach, as ices melt into their elements. It is right to inform them, that nothing of this kind happens, and that bile comes from the liver alone, without being formed in the stomach; from which however it may be derived in larger quantities, by distending the stomach with improper or indigestible food.

I cannot take my leave of Popular Remedies, without mentioning that spruce beer, acquired at one period great fame in St. Domingo as a sovereign medicine in the Yellow Fever. From the beginning, I gave no credit to the idle reports circulated in its favour. I could not reconcile to myself, that spruce beer, which had no perceptible action on the system, but as a laxative, could possibly change the course of so powerful a disease as the Remittent

of St. Domingo. Overpowered however by reported instances of success, and the conversation of every body; it became requisite to give it a trial. I accordingly permitted some sick sailors, in various stages of the Remittent, to use this new remedy very freely. In some, it produced vomiting and sickness; but in general, had its common effect as a laxative. But in no one instance whatever, did it appear in the least degree to affect the course of the fever. Indeed our soldiers, could not have perished, if fortunately it had possessed any virtues, for they very freely indulged in this pleasant beverage. Mr. WEIR made trials of it at the Mole, with the same liberal spirit, that always attends him. I had no opportunity of hearing the result.

The person who first promulgated the virtues of spruce beer, was one SMITH, the master of an American vessel. He maintained that by its use only, he had preserved his ship's company; and communicated his knowledge and doctrines, to the masters of some English transports, who immediately became Pupils and Practitioners. The system was simple and pleasant, and peculiarly adapted to the palate of sailors. It accordingly spread with
great

great rapidity among the shipping, who converted disease, into a social intercourse. But unfortunately numbers perished, either from too much or too little of the prescription.—SMITH however, who in the eagerness of system had not lost sight of his interest, accomplished pretty fully his views in practice. Besides a considerable reputation, for inspired knowledge, and being the founder of a new sect of physicians, he enjoyed the satisfaction of selling a considerable cargo of essence of spruce; which his new pupils greedily purchased at his own price. This imposture was ingenious, and has the advantage of being less prejudicial, than many other impositions on the Public.

I shall now speak a few words on what is termed,

THE PRICKLY HEAT.

The PRICKLY HEAT has been so termed from a sensation which attends this eruption, as if the skin was pricked in the several points which it occupies. The prickly heat begins to make its appearance how soon the perspiration

ration has become general and constant, and spreads itself all over the body, beginning where the perspiration is most profuse. From the pricking sensation, which attends it, and an uneasy itching, it becomes at times highly troublesome, and a real disease.—There is a kind of sensibility spread over the whole skin, so that it will hardly bear the touch of the softest shirt, and renders every movement of the body painful and tormenting; but especially so, before the commencement of a free perspiration; just as the body attains full warmth.

This eruption, by the inhabitants of the East and West Indies, is reckoned the best indication of a high and secure state of health. They believe, that something very injurious to the habit and constitution is now thrown on the surface, which had previously lurked in the inmost system, and was inimical to the principles of life. They consider no one in a state of any security, until this eruption has made its full appearance; when they are persuaded, he cannot suffer from any effect, the climate can produce.

The Prickly Heat, is undoubtedly a promising and salutary appearance, as it is the effect
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of an established and powerful perspiration, which is certainly a discharge of the highest importance in a warm climate. It is indeed seldom, that any one, falls into a state of illness, or yields to the Remittent, where the perspiration has been free, copious, and established. The great mass of fluids, is kept in a due state of coolness, the force of the blood is directed towards the surface, and a proportion of great importance, is established between the bulk and expansion of the fluids, and their containing vessels. It will be easily conceived, that if the skin becomes locked, and impervious, on the admission of morbid particles, that a chief source of escape, is barred against them; through which in other situations they might have passed innoxious.

The Prickly Heat then, as a sign of free and copious perspiration, is a very salutary and important eruption. But it is not critical, or does it consist of any injurious matter thrown on the surface of the body. For, we first observe, that it arises with the commencement of perspiration, and is increased or diminished with the causes, which increase or diminish perspiration itself. Every one must have remarked in a warm climate; that during the

coolness of the morning, there is very little of this eruption visible; nor is the skin painful or uneasy; but when exercise, or the natural progress of the day, have directed the circulation more powerfully to the surface; a pricking painful sensation immediately commences, the eruption begins as it were to emerge from the skin, and becomes efflorescent; until the actual commencement of perspiration gives it, its full and complete appearance. It is observable too, that during the land winds, which lock the skin very completely, and render the body hot and uneasy, the prickly heat is hardly apparent. It is not unusual on these occasions, to drink warm diluents, to restore perspiration; the moment it begins to make its appearance, the prickly heat begins also, and gives the first warning of its approach. From this connection, and subsequent appearance, uniformly present, between the perspiration and prickly heat, the one always preceding the other, I think they may be classed in the relation of cause and effect. The prickly heat never made its appearance in any person, not subject to very copious perspiration, and copious perspiration never continued for any time, without producing the prickly heat.

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The causes which increase or diminish perspiration, likewise increase or diminish the prickly heat. But besides these relations, which mark them as cause and effect, we shall be able to account for the phenomenon, on this reasoning better than any other.

It will be difficult to show, that any matter injurious to the constitution really existed in the system, previous to the appearance of the prickly heat. When such matter is any how introduced, it is seldom thrown on the surface, without the intervention of a febrile stage, and after a certain progress, retires or scales off, leaving the body perfectly free. But nothing of this kind is observable in the production or appearance of prickly heat; it comes on avowedly in a state of health, connected with a phenomenon the most salutary that can happen; and without the presence or assistance of any febrile commotion. It has no stated or precise period of existence, and does not retire or scale off at any given time; but maintains its appearance, as long as the perspiration is free and uniform; as long as the causes which produce it operate. When these cease, or are diminished, the prickly heat disappears, or is considerably lessened.

Let us attend to the manner, in which it would seem to be produced by the action of perspiration in the vessels of the skin. It is produced in the same manner, with eruptions which appear on the surface, in consequence of applying plaisters, such as Burgundy pitch, or the emplastrum roborans, that is, by exciting great and unusual action in the vessels, and supporting a continual perspiration. It is not improbable, that the perspiration in a warm climate is somewhat more acrid than in colder countries; it will be therefore more apt to irritate the mouths of the exhaling vessels on the surface, and at length to erode them, so as to produce the prickly heat. This eruption would seem to be produced then, in the following manner. The exhaling vessels on the surface, by the general direction of the circulation towards them, are made more irritable, which is still more increased by their perpetual action in pouring out the perspiration, which is itself an acrid saline matter, by which their orifices are eroded. These erosions pour out a lymphatic fluid, which incrusting on the skin, forms the eruption. The pricking sensation previous to the actual commencement of perspiration, would seem owing to the irritability of the vessels on the surface,

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by which they are thrown into unusual action on the first approach of an uncommon quantity of blood towards them.

From this account of the Prickly Heat, which I believe to be just, from all I could ever observe, it is evident, that there is nothing critical or dangerous in it ; that it is not matter thrown out on the surface, to relieve the body ; and that it is in no other way salutary, than as it indicates, a free and copious perspiration. From this account, it will also be evident, that there can be no danger from the retropulsion, or rather the retiring of prickly heat, except what may arise from the cause that checked perspiration. Many absurd notions have been entertained on this subject, which have really proved prejudicial to health. It has been very generally supposed, that the matter of prickly heat was highly injurious, and therefore, that the retiring of it into the body was extremely dangerous. It was remarked, that when it suddenly retired or vanished from the surface of the body, that disease usually ensued, and the danger of it was ascribed to the matter of prickly heat again entering the circulation. The people who thus reason do not recollect,
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that whatever obstructs perspiration, or stops it entirely, whether cold, or the effects of fever, must also put an end to the prickly heat, which is only an effect of perspiration. The danger then, does not arise from the retropulsion of prickly heat, but from what caused the obstruction of perspiration, and perhaps from the obstruction itself. From false reasoning on this subject, many men are made extremely unhappy, who believe, that the least diminution of the prickly heat is dangerous, and attribute to this eruption every disease, or unpleasant sensation. Their life, is a cautious regimen, and their feelings, are alive to every change. I have known many persons, fall into a dangerous state of relaxation, because they would not continue the cold bath; for fear of beating in the prickly heat. Theories of this kind are dangerous, when they impede or destroy salutary habits.

Before I had an opportunity of attending to the prickly heat, I was biased by the general prejudice, and avoided every thing, that I thought tended to repel it. I was afraid of the cold bath, and avoided it. On my arrival however in India, I became convinced, that the opinions entertained relative
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to prickly heat were false and absurd. I was determined to try an experiment on myself, and whilst my body was thickly encrusted with the prickly heat ; I resolved to bathe. There was a large Tank of water in the neighbourhood of Diamond Harbour, and I chose the morning, as being more cool and pleasant. I walked to it, without heating myself, and in the presence of a number of gentlemen, who thought I was committing a very desperate action, plunged into the water, where I amused myself for twenty minutes. I found no inconvenience from this practice, and repeated it every other morning, sometimes, in the middle of the day, and often in the evening. The prickly heat was diminished, because the perspiration received a temporary check, but with the return of that discharge it returned also. But neither the suspension of perspiration, during the time of bathing, nor the consequent absence of the prickly heat, which lost its efflorescence, and seemed to retire, created the least degree of ill health ; on the contrary, I found the cold bath attended with its usual effects of increasing the vigour and hilarity of the system. I could not for a long time prevail on any of the officers to follow my example,

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from the dread of bad consequences. At length the seamen began to follow me, and ventured in. When they found it was not attended with any bad consequence; for all of them were covered over with prickly heat; they plunged in without reserve, and often, when in a state of perspiration, without ever feeling the least inconvenience. Such was the effect of prejudice, that if I had not in my own person, tried the experiment; I should probably continue to believe, that the prickly heat was a critical discharge. The effect of such prejudices is often dangerous; we are deprived of a very salutary practice, and our views of disease are perverted: Thus a person, who believes, that the striking in, as it is termed, of the prickly heat, is attended with bad consequences, nay with imminent danger, lives in a state of perpetual anxiety; and in a warm climate, would avoid bathing; the most salutary of all exercise. And when in a state of illness, if the prickly heat retires, instead of attending to more important symptoms, the chief attention would be directed to restore this eruption, which has no connection with the disease, and is suppressed only in consequence of the diminution of perspiration,

perspiration, but in no other way adds to, or forms the disorder of the patient.

If I am right in affirming that the prickly heat is merely an effect of a very copious and continued perspiration; and depends entirely on that state, it will follow, that the precautions usually taken to guard against its retiring are useless; and that when it does retire, the danger does not arise from that circumstance, but from the action of a cause diminishing perspiration.

The prickly heat however, at times, rises to a height which constitutes disease. The patient, from the extreme irritation, is made uneasy, and some degree of feverishness is induced; in this situation, the physician is sometimes called for, and immediate relief expected. It will be evident, that no immediate relief can be reasonably expected; because the cure must depend on diminishing the perspiration, and averting from the surface the direction and force of the circulation. This cannot be done suddenly; some relief may be given by diminishing the cloathing; by laying aside flannel, and substituting cotton shirts; by avoiding diluent drinks, violent exercise,

ercise, smoking, and heated rooms, or messes. But where the patient is very uneasy, and especially if he is full and plethoric ; to the means already recommended, a blood-letting ought to be added, and afterwards several doses of lenient physic. The patient should live on a lower diet, and take little exercise ; he ought to drink less, and avoid every situation, where he may be exposed to heat. After premising these means, he should be directed to the cold bath, which will so moderate it as to become very tolerable ; if it is not entirely banished. But no degree of it forms any objection, to cold bathing among the troops ; it is not attended with the smallest danger, and is a means of increasing the health and spirits of the soldiers. I have seen this prejudice, prevent a number of men from bathing, in situations, where they might have enjoyed this salutary and delightful luxury.

It may be useful too, to impress on the minds of practitioners and patients, this general truth ; that no disease of any importance, ever had its origin from the striking in or retiring of the prickly heat. But that in cases, where disease has occurred, and where
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the prickly heat retired ; this has happened in consequence of a cause, which deranged the system in general, and diminished perspiration. We are therefore, not to look to the retiring of the prickly heat in any important light ; it is one of the symptoms, but not a cause of disease ; and we are not to lose time, in directing our efforts to restore this eruption, which will of itself return with perspiration. We are to attend to more important circumstances, and to direct our views to the general effects of the morbid cause, instead of combating one individual effect. In this manner danger may be prevented, and the disease brought to a happy termination. But whilst we were persuaded, that the prickly heat possessed some noxious quality, destructive of life ; our efforts were directed to throw it again on the surface. For this purpose, heating means were employed, until the original disease was either exasperated into a more dangerous form, or fully established itself in the system.

I have remarked, that it was a very rare occurrence among the French, whose habits are very different from ours. It is seldom or never seen, among the negroes, or the natives

of the East Indies. Our systems are more heated, from our mode of life, and our perspiration more saline and acrid, than that of the French. They hardly know the prickly heat, whilst few of us escape it. It is however of consequence, to view it in its proper light, and not to suffer ourselves to be misled by an improper prejudice. One circumstance has chiefly contributed, to erroneous opinion relative to the prickly heat.—It was observed, on the application of cold to the body, that the prickly heat disappeared, and that some unpleasant symptoms occurred, which were attributed to the departure of this eruption. It was further remarked, that warm bathing, which usually brought back the eruption, afforded great relief, and removed the unpleasant sensation of the patient. The whole of the disease was of course attributed to the retreating of the prickly heat, and the recovery to its restoration. Now, the fact is, that cold, by impeding perspiration, and shutting up the skin, had produced the degree of illness which existed, and that this exhalation being for a time much diminished, or altogether absent; was the cause of the departure of prickly heat, and the warm bath, by relaxing the contraction on the surface, and restoring perspiration, restored

also the eruption, and removed the disease. But the whole of the disease consisted in a simple obstruction of the skin, and a diminution of perspiration, the departure of the prickly heat, being merely an accident, which had no share in producing symptoms, being itself an effect of circumstances, which had previously occurred.—

Having now finished, all the observations I had to offer, on Diseases in the West Indies, I shall proceed to the APPENDIX, and endeavour to show, that the reasoning I have employed on the treatment of Fever, has influenced physicians tacitly in the cure of most diseases.—

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Reasoning of the Author confirmed by Practice,

In INTERMITTENTS ;

FEVERS ;

ULCERS ;

LUES VENEREA ;

SMALL-POX.

IN the beginning of this book, I remarked that the practice, by definite indication, in Fevers, was not to be trusted, until greater light was thrown on the Proximate Cause : that our attempts must be directed, to effect speedy and powerful changes, to alter the whole condition of the body, to introduce new movements, and to impress on the system another mode of action. Let us examine with candour the treatment of diseases, and see how far this practice, though not acknowledged in

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terms, has prevailed.—And first let us proceed to —

INTERMITTENTS.

It will probably for ever remain a secret, how these assume their peculiar and distinguishing types. We cannot form any theory relative to this point, that can afford the least satisfaction to a just thinker. Leaving this investigation, to some fortunate genius; I shall attend to the different methods of cure, which have occasionally proved successful.

When we attempt to prescribe in Intermittents, from a knowledge of their proximate cause, we find ourselves very soon in obscurity. The remote causes, are indeed, pretty well ascertained, and the situations in which Intermittents usually arise, are likewise well-known. But of the precise condition, which constitutes the proximate cause, we are entirely ignorant. From a difference in the condition of the system, or the modification in the remote causes, marsh miasmata sometimes create Intermittents, sometimes Remittents or Dysentery. We remark, that
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an exposure to these miasmata, after a certain period, produces a peculiar mode of acting in the system, which brings on cold shivering, heat and sweating; and disposes these phenomena to disappear and return, in a certain periodical manner. It is acknowledged, that the proximate cause is unknown, but we know, that its mode of acting must be changed, or itself banished, before any thing can be done for the effectual relief of the patient.

When we observe one cause, producing various effects in different bodies, it follows, that the cause itself is modified; or the bodies to which it is applied, determine its action in a particular manner. It is remarkable, that a contagion, evidently the same, when applied to different bodies, produces effects so very various in each. It is not therefore improbable, that the types of Remittents and Intermittents, result from the habit; and not from any specific variety in the morbidic miasmata. It were much to be wished, that we could ascertain the precise state, which determines the type; but this I fear is not to be attained. Our prescriptions in Intermittents, are founded

chiefly on experience, gained from casual observation, or accident ; for we cannot find indications, on a knowledge of the proximate cause. It is true, that physicians have supposed it to consist chiefly, in an atonic state of the extreme vessels, and have ascribed the good effects of bark to its tonic powers. But it is not by any means evident, that this atonic state exists in all cases, nor is it at all clear, that the bark effects a cure, by communicating tone. If bark operated in this manner, other tonics would produce equal good effects, in proportion to their powers ; but this does not happen. Besides, it will presently appear, that other means effect cures in Intermittents, which do not in fact possess any tonic powers. The truth seems to be, that a secret change is produced in the morbid action, which at last ceases, and the usual movements are restored to the system. We direct our views to create a change, in the general action of the system, so as to dispossess the peculiar modes of the morbid action. Such a change, Peruvian bark is known frequently to effect, and experience supports its use. But other means have been also employed

with success, in changing the morbid action, and restoring health to the system. Some of these prevent only the return of one paroxysm, whilst others are attended with more permanent benefit. An emetic given at the time a paroxysm is approaching, sometimes entirely prevents it; and the ingenious LIND, has shortened the duration of a fit, by the use of opium. Now these means, separately examined, are in themselves different; and produce different effects. They are however calculated to effect a change, which banishes the morbid action.—

If it be said, that bark cures Intermittents by giving tone; we may remark, that the operation of emetics is not tonic, nor has laudanum, any striking power of this kind. When spiders, or other disgusting animals, are given to aguish patients, the practice is strictly founded on the plan of changing morbid action without definite indication. Horror is excited, and the system is under the influence of a powerful change, which supercedes the agency of the morbid cause. I cannot in any other manner, account for the good effects, which have sometimes arisen from swallowing such animals. To the same account may be placed the benefit
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of dashing water suddenly on the patient; which has often shortened the duration, and meliorated the whole of a paroxysm. Exercise, and the effects of interesting intelligence, fall into the same class. We cannot account for their effects in any other manner.

Steel, is on many occasions a powerful and useful tonic; but it possesses little virtue, in curing Intermittents. The kind of change it produces, does not seem calculated to overcome the morbid action; an argument, that something more than want of tone constitutes the proximate cause.

I have in numerous instances cured Intermittents, in India, and at sea, by the use of calomel, after bark had entirely failed. Now mercury, has never been supposed to give or to produce tone; on the contrary, its action is commonly attended with debility; unless in cases, where it removes a more powerful enemy to the constitution than itself.— Thus, it restores vigour, to constitutions worn out by *lues venerea*, or weakened by the violence of hepatitis. It acts however in the cure of Intermittents, not by
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any specific power, directed to any individual effect of the proximate cause; but by causing a change, in the general movements of the habit, the morbid action is at length banished.

A solution of arsenic, has been employed very successfully in the treatment of Intermittents; and seems to produce its effects in a similar manner. And it would appear, that bark itself, as Dr. JACKSON remarks, produces its effects, not by any specific power, by which it would in all cases act successfully, but by introducing gradually into the habit counter movements. Methods the most various, have sometimes produced the most happy effects, so that we must conclude, that these arose, merely from inducing changes.

In the remarks now offered on the manner of treating Intermittents, it has been observed, that various plans frequently succeed in the prevention of paroxysms, which do not appear to be directly calculated, to obviate the proximate cause. The indications are not formed on any definite knowledge of this subject. We merely effect a
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cure by producing a change. Bark, which frequently succeeds, is by no means a remedy always to be relied on. I have met with many agues of the tertian and quotidian periods, which resisted the use of bark in the largest doses, and after a long continued use. The Intermittents of Bengal, particularly furnished these instances; those of China, yielded to the common treatment. In cases of this kind, even where great debility prevailed, I used mercury, and was never disappointed in my views. Soon after the patient commenced this course, the paroxysms became more mild, continued for a shorter time, and in all respects changed their violent procedure. That is, there was something in the action of the proximate cause, which the feeble effects of the bark could not banish, but which gave way to the more potent operation of mercury.

The native practitioners in India, from a kind of instinctive knowledge, for they are very illiterate, pursue the scheme of introducing changes in the system. When at Calcutta, I happened to converse with one of them, on their method of curing the Intermittent, which not unfrequently attacked the

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the inhabitants. He informed me, that they pursued a variety of schemes; that they sometimes poured buckets of cold water, on the patient, during the cold fit, and afterwards wrapped him up in warm coverings in bed; by this means he alleged, that the cold fit was shortened, and the hot brought on. He said that the sweat flowed more freely, and that on the whole, the paroxysms were shorter and milder from this practice. He showed me some powders, which had an aromatic smell like cassia, which he had prepared from dried herbs; but he would not produce the herbs themselves, nor inform me, where to procure them. He said, they effected cures in a very short time, among their own people; but that the blood of Europeans, being more hot and inflammatory, required more powerful medicines. He indeed produced a nut, of an olive colour, covered with an elastic, flexible husk, about the size of an almond, it contained a bitter tasted kernel, with a small degree of aromatic flavour. The method of using this medicine, according to him, was to bruise the kernel with a few grains of common pepper, and forming the mass into pills, to administer them frequently till
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the paroxysms, at length gave way. He called the nut, kút ka léeja, or lota kâ pūl. I supplied myself with large quantities of the nut, and tried it, in many cases, with excellent effect, but could not trust the cure entirely to their use. It was a powerful and good bitter, it warmed the patient; and created a grateful and pleasing sensation in the stomach.

From what has been said on the variety of methods, in which Intermittents may be cured, it is evident, we do not practise on any definite indication; we either try changes, which experience has already sanctioned, or seize an analogy; and exhibit such remedies, as in other cases are known to produce powerful effects. The treatment of continued fevers, is founded on the same principles.

Of CONTINUED FEVERS.

CONTINUED FEVERS have been an opprobrium to physicians in all the ages of medicine. The Ancients have thrown little light on the subject, nor have the Moderns been much more successful. Ingenious
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systems have been offered, and rejected.— Theory, which though speculative, often influences the physician, seldom had vigour enough to change practice, because it was commonly rather an effusion of ingenuity, than an induction from just reasoning. On many occasions, theory and practice have been at variance ; and in general there was little union, between speculation and experience. Cures occurred under the most opposite modes of treatment, and the confidence, which this casual success inspired gave currency to particular remedies.

The Ancients, in their cure of Fevers, for a long period, continued the strenuous imitators of their predecessors, without aspiring to truth or novelty. The remote causes of continued fevers, are undoubtedly obscure ; but above all, the proximate cause, or what more immediately exhibits the morbid phænomena, has eluded every research. It is useless to repeat the various conjectures which at different periods occupied the medical world ; it is sufficient to remark, that none of them have ever led to a decisive, or certain plan of cure.

Fevers, of the continued form, assume, at times, the type of Intermittents; that is, there appears a certain degree of abatement in the symptoms, at stated times; but they again resume their wonted course, in periods corresponding with the returns of tertian paroxysms. This is the most frequent type at least. But whether this depends, on something in the constitution, which determines the return of the fever, or on the operation of powerful causes, is not known. But there are continued fevers, in which no perceptible abatement is evident, and they run through their whole course, without suffering any visible or apparent change in the severity of the symptoms. The operation of the proximate cause, in continued fevers, is steady and powerful; and seems as yet, to have bid defiance, to all the suggestions of theory, or the dreams of credulity. On a survey of the practice, which has obtained in continued fevers, through all the æras of medicine; I confess, that in my mind, it has been uniformly too feeble. The practice of the Indians in America, appears to me to possess more vigour, and to be more likely to do good, than all the systems as yet promulgated by the schools of
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physic. Whatever the proximate cause may be, which produces the morbid action, and exhibits the phænomena of fever, it seems to be tenacious, and to keep possession with wonderful perseverance. Such a cause is not easily moved; powers which produce slight changes are not likely to affect it; bold and decisive practice must be adopted before we can do any thing; and as we cannot pitch on the weak part, for the play of our engines, let the whole system be stormed at once, and the disease banished by a powerful invasion. From the want of this energy in practice, and the influence of idle theories, the treatment of fever, has been feebly conducted. Nor has it ever been clearly proved; although affirmed by credulous or dishonest practitioners, that the course of a fever, was really cut short by these tame operations. It is at least probable, that the proximate causes of disease are only to be removed, by the introduction of counter movements, which effect a general difference, in the action of the whole system, or its parts. Now we see, that the practice in fever for a period of two thousand years, had not introduced changes sufficiently powerful, to remove with certainty the opera-

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tions of the proximate cause, The morbid action, we must conclude, is very powerful, it does not seem on any occasion to give way, to feeble opposition. Slight attempts avail nothing; in such cases, there is room for innovation. If we are persuaded, that sudden changes, or revolutions, are proper, let them possess energy to effect their purpose. The prejudices of mankind, and the fears of practitioners, oppose this general scheme of treatment, but I have no doubt, but the bold physician, will be crowned with frequent, and unexpected success.

I have often seen remarkable effects from sudden changes, applied in such a manner, as to alter the whole circumstances of the habit. When we see a fever obstinately resisting ordinary means, and sweeping without distinction, the toiling race of man; is it not then incumbent on us to vary our means, and increase the chance of success by multiplied efforts? In such disasters any new plan, can hardly be less successful than the old one; and experiment may at length put us in possession of a better method. All our present knowledge must have at first arisen from chance trials. It is from experience alone, that principles can be deduced, or enlarged,
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that hints can be extracted, which prosecuted by further enquiry, may become the basis of systems. Investigation, is slow and laborious, we generalize and extend from small beginnings; but the philosopher is rewarded by the discovery of truth, by conferring on mankind durable benefits.

From the great mass of casual experience a selection is made, which may serve to enlighten posterity. The method of practice, by inducing a revolution or change in the habit and constitution, and thus banishing morbid action, extends our views, and gives a scope to the physician, which he could not otherwise attain. The doctrine applies to a number of diseases, and gives a new foundation to practice, when indication wholly fails. I shall show in a few instances, its direct application to other disorders, where the practice by indication could have no place; as the proximate cause was wholly unknown.

In the remarkable history related by KAUF BOERHAAVE, of the powers of irritation and sympathy; we see a wonderful instance of the force of terror in changing a morbid
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action,

action, that had established itself fully in the system. The striking figure of BOERHAAVE, his solemn, awful deportment, his determined manner, impressed fear, and excited movements in the system, which banished and conquered the influence of the morbid cause. This memorable history confirms very strongly the reasoning on morbid action, and the manner of changing it, by sudden and powerful means; for in no other way could the mere appearance of BOERHAAVE produce any effect. The surprise however, and impressions of fear, by altering the movements of the system, banished the morbid, and restored the healthy movements of the constitution.

There are numerous cases on record, where sudden and powerful revolutions, have wonderfully affected the body. In Lord ANSON's voyage, it is related, that on one occasion great numbers were prostrated by the scurvy. A ship however came suddenly in sight, supposed to be an enemy; the men were roused, and became anxious and eager for battle. The appearances of disease greatly abated, and they seemed, as it were, to have at once recovered.

vered. They soon afterwards relapsed. The effects of surprise and novelty, banish an obstinate hiccup.

Now there is nothing in these cases, particularly directed against any individual effect of the morbid cause; the whole action of the system is suddenly changed, and in this manner the morbid action is banished. It has been remarked by almost every one, who has ever followed an army, that men languish and become sickly in easy quarters, but recover very rapidly when their powers are awakened, by the approach of danger, or the expectation of an enemy.

I shall now record an instance of the astonishing effects of sudden changes, or powerful movements in the system. When I was proceeding to Bombay, in the Middlesex East Indiaman, a continued fever broke out on board, which attacked great numbers; though very few died. We touched at the Cape of Good Hope for refreshments, and proceeded on our passage. The fever still continued to affect the seamen, and they lingered under it for weeks. When we came however to lat. $36^{\circ} 19' S$.

eight or ten of the people had very unfavourable symptoms. Next day a violent gale arose, with a tremendous, tumultuous sea, agitating our ship with rapid and uncommon motion. It exceeded in violence, all the storms and tempests, the oldest men amongst us could remember. It was wholly out of my power, for two days, to visit the sick, or give them any assistance. When I ventured amongst them, on the third day, I expected to have found several dead, and the others much worse. They had hardly received any nourishment, and little attention of any kind, during the continuance of the gale. But how great was my astonishment to find, when I visited them, that they were all free of fever, and complained only of debility. The course of the fever had been entirely stopped. No one will here argue, that there was any prescription, founded on direct precise indication; the morbid action, which previously existed, was changed by very powerful movements in the system. The dreadful agitation of the ship, appears the chief agent, which by a continuance of three days could not fail to bring on important changes. Fear, hope, and a variety of strong emotions, must have alternately

alternately prevailed. Sudden changes then, have in many instances produced cures, by altering at once, the whole given circumstances, and condition of the body, and by introducing a set of movements totally different, until the system at length adopts its usual and salutary action. This is in no way founded, on partial indication, or any individual effect of the morbid power. I am not acquainted with any indication in continued fever, that would lead me, to be in any measure confident of success. We sometimes obviate pressing symptoms, and remove stimuli, which might support irritation, and we endeavour to support the vigour of the vital powers, until some change may happen; and this comprises all our knowledge in the treatment of fever. In such cases, I should be strongly inclined to pursue bolder means, and endeavour to change the phænomena. It is however evident, that most physicians have aimed, in the treatment of continued fever, to bring on sudden changes in the habit, without consulting lesser indications. Whilst the doctrines of the venerable CULLEN prevailed, the removal of spasm, and the

giving of tone, were the great views of practitioners.

O F U L C E R S.

THE late ingenious Mr. JOHN HUNTER has furnished many curious remarks on morbid action. Let us take a short view of the treatment of ULCERS; and see how far it is founded on our principles. Wounds, in whatever manner produced, from certain unknown causes, in some instances become foul, and unhealthy ulcers. The matter secreted in them is either thin, acrid, or sanious. The peculiar modification of action, which then exists in the vessels, disposes them to this untoward discharge. In these circumstances, a cure is not readily effected; the ulcer proceeds to acquire a worse appearance, and the aid of physic becomes requisite, to give it a better aspect. In these cases, before we can do any thing of the least advantage to the patient, a change must be effected in the mode of action, by which the vessels must be disposed to another modification,

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more favourable to the production of good pus. Many authors have been convinced, that this change has been produced, by a certain management of heat, on the secretion itself; independent totally of the action of the vessels. They became more firmly persuaded in this belief, since the publication of Sir JOHN PRINGLE; where some experiments on this subject are detailed. The medical character of Sir JOHN PRINGLE, stands deservedly high, but he has been misled by the circumstances, on which he grounded his theory. In these experiments, serum was exposed to a regulated heat, and after some time, a whitish coagulum, was discovered at the bottom of the crucible, with a fœtid disagreeable smell. From these appearances, it was concluded, that the mode in which pus was formed, had been discovered, and that the whole process depended on modified heat applied to extravasated serum. Mr. BELL, of Edinburgh, in his treatise on ULCERS, a work of considerable use and merit, has adopted this reasoning. To me, the matter appears altogether different. It would seem that the vessels of an inflamed tumour themselves, communicated to the serum, by
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a peculiar action, the power or capability of becoming pus. And, that the nature of the discharge from any ulcer depended, not on a regulated heat, but on the peculiar action, that may at the time exist, in the vessels of the part, or in the system at large. Thus in a foul ulcer, it happens that no impression can be made on the discharge, by any regulated heat, in any form whatever, yet the exhibition of the bark, produces astonishing effects in a short time. No one, I presume, will argue, that bark in this instance operated on the serum itself, which may be supposed out of its reach, and extravasated in the cavity of the ulcer. The favourable change appears evidently to result, from the action of the bark on the vessels, and system in general, and changing the peculiar state which gave rise to the untoward discharge; by changing this modification of action, the vessels are enabled to endow the serum, with the capability of becoming pus. We remark besides, that tumours undergo an intermediate stage, before pus is produced; notwithstanding the application of poultices or fomentations. If heat alone could convert the serum into pus, this intermediate stage of inflammation

tion would by no means be necessary. But the disposition or capability of becoming pus is communicated to the serum by the vessels, and not by any modification of heat, or any action of it, on the serum, after it is once fairly secreted. Venereal sores assume commonly the most unfavourable aspect, and the discharge is acrid, thin, and offensive, until mercury be given. In vain will poultices be applied, or bark administered, till this medicine has been given. That is, the peculiar action, which exists in venereal ulcers, and constitutes their essential nature is not dependent on the state of the serum, but on that of the vessels, which is only to be changed by mercury. We may remark too, that serum is often extravasated in other cavities, and exposed to considerable heat, without becoming pus. The peculiar action which creates pus, not being present in the vessels, when such extravasation happened, the necessary disposition to form it was not bestowed.

The utility of regulated heat, in the form of poultices and fomentations, is confirmed by experience, but certainly does not produce

duce its effects, by acting on the extravasated serum. The collections of water in dropsy, bear a strong analogy to serum, yet we do not find that heat converts them into pus; the reason is, that the vessels did not bestow that peculiar something, which is necessary to this process *.

The admixture of solids, the dissolution of the vessels, and the addition of blood, do not afford any satisfactory explanation of the phænomenon. The various secretions of the glands, are performed by a peculiar modified action; for although the elements of bile, urine, and semen, may by analysis be discovered in the blood, yet no one has ever detected them in their appropriate peculiar form; nor are they ever seen, before the vessels have performed their peculiar act, by which these secretions are produced. The blood itself seems to derive from the action of the vessels, its colour and determinate nature. They exert upon it a peculiar action, and successive changes complete the process. The stomach

* Vide Note I.

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separates the nutritious parts of the aliment, which change into new qualities, by the admixture of bile and the pancreatic juice. The lacteals perform their part, and further changes are effected in the progress of the chyle, through the thoracic duct. Till at length, the grand operation, which finally determines the essential nature of blood, is performed in the lungs, heart, and arteries. From this seeming uniform mass, are derived various fluids, by the action of particular organs. Frequent changes happen in these secretions, when general health is by no means impaired; thus the colour of the urine, and the consistence of bile, are hourly varying, from a change in the mode of action, in the glands which perform these secretions. To a change in the action of the kidneys, may be ascribed the foundation of gravel stones. They are not always the effect of a nucleus, casually existing in the bladder. The mode of action in the secretory vessels, disposes particles, to separate themselves from the urine; and thus produces, if I may so speak, the gravellish tendency. Baron HALLER informs us, that the presence of females, promotes the seminal secretion, and excites uneasy sensations

sensations in the glands themselves. This unquestionably proves, that a peculiar action is produced ; and the immense flow of pale urine in hysteric females, shows, what increased or varied action may perform.

I have adduced these instances, in support of the action of the solids, which appears to be the chief agent in producing the various animal phænomena ; but practical benefits result from correct reasoning. Thus the theory of Sir JOHN PRINGLE relative to pus, may on several occasions, lead to an inert or improper practice. It would for instance, lead to local applications, in cases, where the system at large ought to be acted on ; and we should be losing time in feeble efforts, instead of pursuing a manly vigorous treatment. Thus far, false theories are dangerous, and merit strict attention. Whenever our practice is the result of theory, it becomes us very narrowly to examine it. Physicians, and among others Sir JOHN PRINGLE, have been wonderfully deceived by the application of their inductions from experiments ; the very principle of such experiments being erroneous. I mean ex-
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periments made on various substances out of the body; or on dead animal flesh. It is unphilosophical to reason in this manner, or to expect any useful induction from any number of experiments, made on substances, whose qualities with respect to each other, are so remarkably opposite. We cannot hope for useful discovery, in this mode of investigation. The animal and dead fibre, differ so widely, as not to admit, almost, any common analogy. Experiments of this kind, may be useful to commerce, and enable victuallers and commissaries to preserve provisions; but cannot be of the least utility in medicine. Camphor has been found in these trials, to resist the putrefaction of animal fibres, and has been since employed as an antiseptic in fevers; but if it possesses any power of this sort, it arises from a very different source, from that to which we ascribe a preservative quality, with respect to dead flesh. Let it be observed, that common culinary salt, in a remarkable manner, resists the putrefaction of dead flesh. Yet no one has thought of prescribing it in scurvy, which is often attributed to its use.

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Upon the whole there is no credit due to experiments made on any subject, except the living human body. In some very broad analogies, from the brute creation, we may receive principles, though I am inclined to believe, that we have been led into errors, from prosecuting too earnestly this manner of reasoning. The constitution of brutes is very different from ours, and we are subject to much fallacy, because we must be satisfied with what we can observe, without the benefit of interrogation.

Upon the whole, it would appear, that in INTERMITTENTS, CONTINUED FEVERS, and ULCERS, we effect cures, not by directing our efforts to a precise known proximate cause, but to effect a general change in the system, and by altering all the circumstances banish at length the morbid action.

Let us attend to the progress and cure of

L U E S V E N E R E A,

And see how it accords with these principles.

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The matter of Lues Venerea, when applied to certain parts of the body, produces a peculiar morbid action, which characterises the disease, and which yields to the changes, experience has taught us, mercury can produce. It evidently arises from contagion applied to the body, in an active state; and this contagion generates and produces the disease. When we examine the subject more narrowly, a regular progress is observed in all the phænomena. The contagion, soon after its application to the system, finds a nest, where by a power unknown to us, it seduces the vessels from their usual mode of acting, and produces in them a disposition to secrete the venereal virus. This peculiar modification of action in these vessels, whatever it be, forms the proximate cause; and exhibits the morbid phænomena. In this manner chancres, and other venereal appearances, are produced. When a large portion of the living system is under the influence of this action; the quantity of the virus is increased, till at length, there appears a general tendency to adopt the new impression; when the habit may be said not improperly to be venereal. This is the manner of its progress. Ex-

perience has fortunately taught us, that this morbid action, so formidable to youth and pleasure, and so dangerous to the procreative faculties, yields to the action of mercury. The object of the physician is to change the morbid action, introduced by the venereal virus, and to substitute another set of movements, so as to bring the system back, to its ancient laws, and common action. But we cannot perceive the peculiar mode in which the virus acts, so as to produce its phænomena, nor do we know precisely the manner in which mercury brings the system to health, and cures the disease.

Experiments have been made to ascertain, whether there was any chemical affinity between the venereal virus and mercury, by which they might be disposed to unite, and form an inactive neutral. These experiments, like all others made out of the body, gave no satisfaction. For, if it had been proved, that such attraction actually existed; little or no light, would be thrown on the subject. It would not follow by any means, that this combination took place in the living system. We have numerous instances in practice, where the local application

cation of mercury is daily made, without producing any good effect, until the system in general was affected; that is, till another action banished the venereal movements. Nor does mercury itself seem to possess a perfect specific power, by which, in all cases, it would effect a cure. There are circumstances of the constitution, which by affecting either the morbid action itself, or the operation of mercury, prevents the habit from recovering. Too much vigour, or too great debility, impede and retard the successful operation of mercury. I have seen instances in scrophulous habits, where the utmost difficulty occurred, of making mercury at all useful; and where there was something in the morbid action, which resisted all opposition, and proceeded to the full destruction of the constitution.

Lues venerea, is the consequence then, of a contagion perverting the usual movements of the system, and seducing the vessels of the part to which it is applied into a new action, which induces them to secrete a matter similar to that which excited the commotion in the habit. And mercury is another power, which by affecting the system,

in a more vigorous manner, banishes the action of the venereal virus, and brings back the system to its usual obedience, to its common laws. But the definite manner, in which it operates, we do not know, nor do we know the proximate cause. No one will pretend to say, whether the action of the vessels, where venereal ulcers arise, be quick, or slow, or oscillatory. There is a secret modification of action in the proximate cause, which the wisest of us have not been able to ascertain; nor the manner in which mercury banishes it.

We observe, from experience, a number of circumstances which influence the favourable, or unfavourable effects of mercury; these as matters of fact, for we cannot account for them, guide our practice, and influence our prescriptions; and this is all the knowledge we really possess. There are undoubted proofs, that the state of the body changes the whole phænomena of a disease, so as to give the effects of one cause a total different aspect. Thus the matter of lues venerea applied to glandular or secreting surfaces, brings on a morbid discharge, with many other symptoms very different from

from the venereal chancre. And yet no doubt can be entertained, that the matter which produces both, is entirely the same. I know, that other opinions have been advanced on this subject, which may be very ingenious, but are certainly very remote from the truth; as discovered by experiment or analogy.

Let us next attend to the phænomena of a dreadful disease, the

S M A L L - P O X.

The matter of the small-pox, when introduced, forms, like the venereal virus, a nidus for itself, and there exerts its peculiar powers, by reducing the vessels of that particular spot into a new action, by which they are induced to secrete a fluid, every way similar to the original contagion. This forms a kind of magazine, from which particles of matter are supposed to be detached into the blood, these by some unknown law of the system, are directed to the surface where they form nests to themselves, and undergo a similar process, to

the matter at first lodged. Each spot has its intermediate stage of inflammation, or its proximate cause, or secret action, by which the matter of small-pox is finally and completely produced.

The fever of the small-pox, which precedes the eruption, appears to me, to be the revolt of the system from its common laws, to adopt the new or variolous action. It is doubtful perhaps, whether particles in a ripe formed state are really detached to the surface of the body; it is more probable, that the variolous matter acts from the spot in which it was at first deposited by the intervention of the nervous system or sympathy, and in this manner seduces the vessels of the skin, where if a tendency to inflammation happens to be present, the variolous action will become general, and a large quantity of the matter will be produced. This reasoning is countenanced, by observing, that no matter, in a formed state, is discovered in the early variolous pustule, which is a hard inflamed spot, that produces, after a certain period, the matter of small-pox. The inflammation or peculiar action seems absolutely necessary to the production of the variolous matter. If this
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is not true, the future disease, ought always to bear some proportion to the quantity of matter at first introduced, or afterwards generated in the nidus; but it is known, that no such proportion has ever taken place. Nor would the pustules ever require the intermediate process of inflammation, but would appear at once full of mature and ripe small-pox. So that it is not quite clear, that matter is positively dispersed in a formed state over the body. The proximate cause of the varioli, then, is a secret modified action, which induces the vessels to adopt new movements, and separate the variolous matter. The vessels under this influence are for the time made glandular, and every spot may be justly considered as a gland secreting a peculiar fluid.

We are evidently ignorant of the proximate cause of these phænomena, so as to prescribe for it, and banish it. Experience has indeed shewn us many circumstances, connected with the favourable or unfavourable progress of the disease, and these are embodied into regulations for our conduct in the treatment of it. But we do not proceed further, we have no definite or de-

cific indication ; we cannot prevent the disease, but by flying it, nor can we with certainty amend its symptoms, or positively cure it. The vessels on the surface are the seats of the disease ; on their condition much must depend, and on the kind of action they adopt. The application of cold, in the manner of the celebrated Baron DIMSDALE, seems to put them in a very favourable condition for a mild secretion. The inflammatory stage is moderated ; on which so much depends in all diseases, where matter is formed ; and the whole process is made more mild and gentle. The species of action, which would produce a malignant kind, is thus changed, and a modification introduced, which conducts the disease to a happy issue.

I have no doubt but some important improvements may be yet made in the management of this formidable malady. The late ingenious and learned CULLEN, when treating of the small pox in his system, rightly imagined, that a peculiar state of the vessels on the surface, regulated the future events of the disease. These vessels certainly appear to be the principal agents in
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the production of the variolous matter, and therefore must influence the issue. It is singular, that the variolous matter, having been once general in the system, cannot be again reproduced, by applying the contagion; this is one of the mysteries in the animal œconomy, which we may never be able fully to explain. There may however be a chance of discovering a remedy, which, like mercury in the lues venerea, may counteract the proximate cause, without going through its usual revolutions. I think there cannot be a doubt, that the variolous disease is produced *, in the manner we have been stating; and that improvement in the manner of treating many diseases may result from observing minutely, the laws which regulate morbid action.

We have thus shewn, that in many diseases, although we evidently mark a peculiar morbid action, constituting their proximate cause, yet we are not sufficiently intimate with its peculiar mode, so as to prescribe for it, or change it; and therefore, that our practice, when directed to some

* Vide Note II.

of its effects, becomes feeble, as the cause continues its operation. But when we attempt to change the whole given circumstances of the body, and introduce sudden and considerable changes, we have a chance of banishing the disease from its strong holds, and when its morbid action ceases, the system naturally adopts its ancient laws, and usual movements.

N O T E S.

NOTE I.

THERE are some circumstances in
 VENEREAL ULCERS, which I could
 not so properly blend in the discussion of
 that subject; but which may be added
 here. It has been remarked, that the ve-
 nereal disease, does not seem to depend, on
 the nature of the matter which produced
 it; that is, on the greater or lesser vigour
 of the virus, but on the state of the
 system to which it is applied. This I be-
 lieve in general to be found true.

I shall just mention one condition of a
 venereal ulcer, in which it may be possible,
 that the virus, is much below its usual
 standard of vigour, and in this state, may,
 from want of strength in the virus, bring
 on a milder disease. This I confess is
 mere conjecture, which I have not been
 hitherto able, precisely to ascertain from
 experiment.

experiment. This situation occurs at the critical period, in which the venereal action is about to cease ; and before a perfect cure is effected. It occurs in gonorrhœas, when about to degenerate into gleet ; when the affected vessels, are under that compound influence, where the secreted fluids, are neither morbid, nor perfectly healthy. Such a state may really be supposed to exist, near the cessation of gonorrhœas, and when venereal ulcers, losing their characteristic appearance, begin to put on the aspect of simple sores. It may be difficult to conceive that the vessels can be under the influence of a double action at the same time ; but in a state of disease, they always are, for the healthful movements of the vessels are never wholly destroyed, till death. Projectile bodies are under the influence of two powers, the projectile itself ; and the power of gravitation, the result of which is the parabolic curve ; it may be thus in the human body, two actions may exist, which at length terminate in the usual movements of the system.

It has been remarked in the East Indies, and I can bear testimony to the fact, that
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the venereal diseases of Bombay, are more violent in their progress and effects, than in any other quarter of that country; Dr. KAY, of St. Helena, an experienced and acute observer, remarked, that most of the desperate cases he had seen, on their return to Europe, had come from Bombay. To what is this difference owing? is it to the nature of the virus? or in something peculiar induced in the constitution, by the climate of that island?

N O T E II.

It has been supposed, that the variolous matter produced its effects by fermentation, and there are some at this day, who believe this doctrine. If it was in any degree true, the quantity of small pox ought to bear some proportion, to the violence of the fever, or first process; and the fermentation ought to produce on the surface, matter at once fully formed; instead of which we observe a regular process is necessary, to mature the pustules which first appear small and inflamed. The ingenious and candid baron DIMSDALE, has remarked,

that the future disease, was generally in the inverse ratio of the early symptoms. In proportion, as the symptoms in the arm, where the virus was inserted, were violent and rapid, in their progress, in the same proportion the future disease was mild and secure. This would not happen, if the disease was produced by fermentation. It is curious that matter in a formed state entering the circulation, as it does when the small pox disappears, produces so little danger. It is true, there is some commotion, as the secondary fever, seems evidently the consequence. It is also remarkable, that the secondary fever, is more severe, when the matter absorbed has not undergone the full process of maturation.

Nor can we explain, how maturation diminishes the virulence of the virus, with respect to one individual; and yet possesses its full activity, when again applied to another person, to give the contagion. The kind of small pox is evidently connected with all the circumstances, which regulate inflammation. It is the effect of a peculiar action in the vessels of the skin; and therefore, that action must be modified, when

when we would attempt to change the qualities of the matter produced. All the improvements of Baron DIMSDALE, have been directed to regulate the state of the vessels on the surface ; and could in no way affect the variolous matter itself ; and I have no doubt, but still greater improvements may be yet made from the use of mercury.

N O T E I I I .

Among the impediments which retard the progress of medicine, we have not marked *false records*, which most unfortunately fill many of our medical histories. These present, if I may so speak, false facts, or facts so represented as to mislead ; and not only perplex the physician, but render his efforts dangerous. It is not possible on any other supposition to account for the total failure of medicines, recorded universally successful, in the hands of some practitioners, and totally useless in the hands of others. The history of cicuta is one example of this kind, and the success of corrosive sublimate, in all cutaneous diseases, another. Men, who thus deliberately mislead,

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and disguise truth, for the sake of theory or system, are atrocious conspirators against the lives of the human race, and pollute the only true source of knowledge. MEAD, and VAN SWIETEN, STORCK, and many others, have given us records of this kind. We cannot be too minute in describing the effects of medicines which are universally recommended; and all the circumstances of the persons to whom they are prescribed. It has been an unfortunate practice to conceal *unsuccessful cases*; and one side of the question has been only exhibited. This is an idle vanity of success, which is soon detected, whilst the veracity of the practitioners is rendered very questionable. It answers the purposes of empiricism, but should be spurned and rejected by a liberal profession.

NOTE IV.

In the enumeration of cases, where a sudden change, not founded on direct indication, produced very remarkable effects, I omitted to mention one of a very singular nature. A soldier in the Welch fusileers,
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the 23d Regiment had been for a long time affected with epileptic fits, which observed very regular periods in returning. His companions however believed, that he indulged them himself, by giving way too much, when he found the fits coming on. He embarked on board a vessel bound from Jamaica to St. Domingo, when the fits observed their usual periods. One of the soldiers resolved to play him a trick ; he made a poker red hot in the cook's furnace, and whilst the poor sufferer was grasping round in convulsive motion, he put the poker into his hand, which he firmly grasped, leaving on it all the skin, and a good deal of the flesh of his fingers. This soon waked him from the epilepsy; his hand was cured, and the disease never more returned. This case was related to me by two respectable officers now living, who were present. The man had been affected for several years with this dreadful disease. I do not adduce this case, as an instance of practice meriting imitation ; but to show the force of very powerful and sudden changes.

N O T E V.

IT may perhaps be objected to the mode of prescribing, for altering morbid action and producing changes, that we cannot often say, what kind of action really exists, whether we ought to quicken or to restrain movements. An ingenious writer observes, “ that in a machine extremely complex, formed by the combination of numerous matter, diversified in their properties, in their proportions, in their modes of action; the motions necessarily become extremely complicated, their dullness as well as their rapidity, frequently escape the observation of those themselves in whom they take place.” Nothing can apply more strictly to the movements of the human body, whether healthy or morbid. There are indeed few instances in which we can perceive or ascertain precisely the kind of action which prevails. Habit, in this, as in many other instances tyrannizes over our native sensibility, and deprives us of that acuteness which accompanied birth. We evidently mark the sensibility of infants, which is affected by the slightest

slightest change. The impression of the air, the expansion of the lungs, the action of light, the increased force of the heart, and perhaps the vibration of their arteries, appear in them to create uneasiness. But habit soon renders us insensible to their movements. We feel the contractions of the heart, only when its palpitations are unusual. We respire without consciousness; and walking is often performed, when we are not by any means sensible of any exertion. Considerable changes, are thus constantly going forward, without our being conscious of their existence. We cannot employ our senses, to ascertain these changes, but we are taught by reason and analogy, that they really exist.

The philosopher who would confine himself, to what his senses distinctly unfolded, might indeed be more accurate in his pursuits; but his knowledge would be very limited, without admitting analogy and probability. Without these, science would be confined within very narrow limits.

But we are sometimes enabled to say with some precision, what kind of action

really exists, in particular circumstances of the human body. Thus, in inflammations of the active kind, we evidently see, and feel, the action of the arteries increased. But there is something attending this action, which we do not comprehend. We cannot ascertain the peculiar modification of it, which induces it to produce pus in those inflamed parts. This is the mysterious part of the business. In fevers, the pulse is often as frequent, and strong as in inflamed tumours; yet pus is not produced, because a something which existed in the pulse connected with inflammation, does not exist in fevers. In running or dancing, the pulse is often accelerated, and beats as rapidly for a time as in Fever; yet the head-ach and lassitude, with the other characters of real fever, are absent; because the peculiar state, in which fever consists, is not at the time present. A flow of tears from the eye is caused by an increased action in the lachrymal vessels; but acrid substances applied to the eye do not produce such a plentiful flow, as when the tears have been caused by grief or sorrow. Because, the peculiar action which produced them, does not exist in the application of acrid substances.

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In uterine hæmorrhage, we can often distinguish two states of action; the one, an increased energy; the other, a diminished action in the vessels. We infer the existence of the first, from a hard rapid pulse, full and tense. We infer the second state, when the pulse is low, flat, and weak; and from the effects of astringents, which in these circumstances usually put a stop to the hæmorrhage. Observation alone can inform us, on these points. But granting, what we must allow, that we seldom know the precise mode of action, we do well when we effect a change, as the system is then more ready to adopt its own healthy and proper movements. Every means, then, ought to be employed, that afford any prospect of effecting these changes; so necessary to the banishment of disease, and the establishment of health.

N O T E VI.

On a careful perusal of Dr. JACKSON'S book on Fevers; it affords me the greatest satisfaction to find, a coincidence of thinking, in many particulars which I have treated.

treated. He is the first who boldly pushed cold bathing in fevers, to an extent unknown to former practitioners; he has explained the incessant vomiting and its phenomena in the Yellow Fever on the principles I have been endeavouring to establish. From him I have derived many useful hints, which I had constantly in view, in the course of my experience. Whatever I have been able to observe confirms the general accuracy of his remarks; and I hold this no small proof of the fidelity of what I have related. From Mr. JOHN HUNTER I drew my first notions of morbid action, and endeavoured to apply his doctrine more extensively in diseases; especially in fevers. To follow such leaders, is at least meritorious; and to enlarge or confirm doctrines of which they laid down the elements, may possess ultimately more use than novelty.

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